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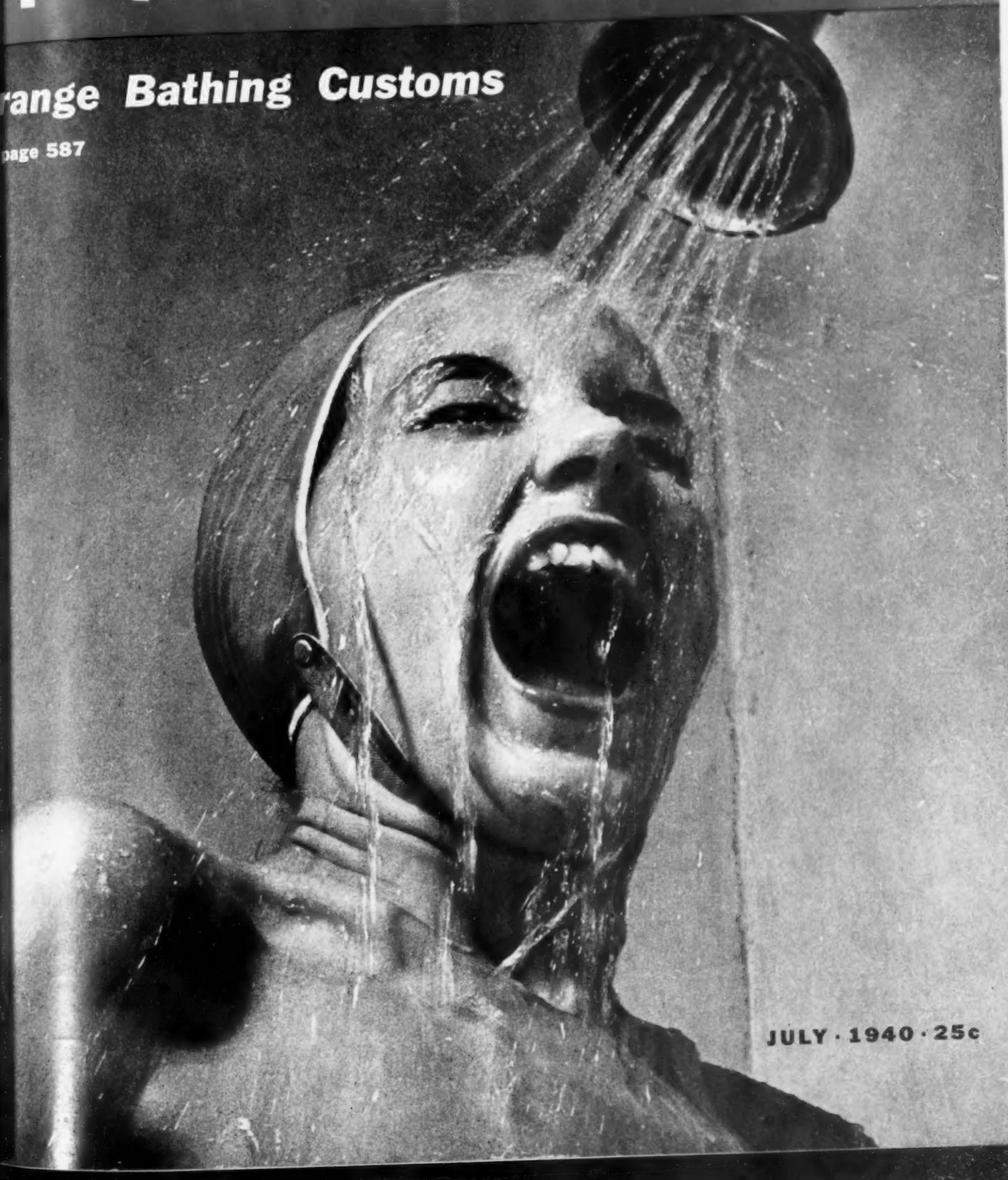
THE HEALTH MAGAZINE

HYGEIA



trange Bathing Customs

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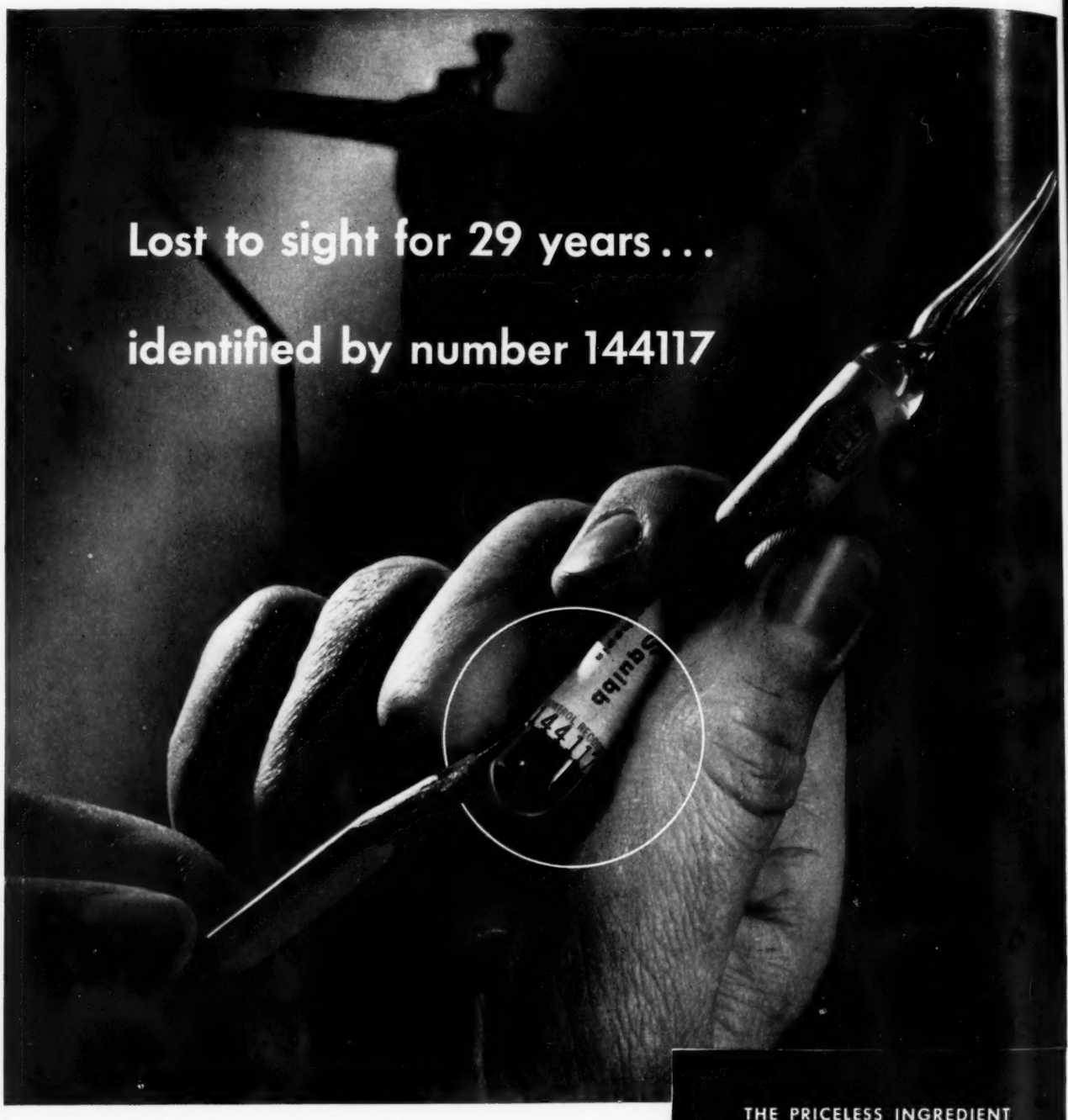
JULY · 1940 · 25c



Not long ago an elderly New York pharmacist passed away. In settling his estate the executors found some articles that had long been hidden in the cellar stock room. Among them was a package containing six ampuls of a Squibb anesthetic product.

However, the control number on each ampul was entirely legible, as shown in the picture above. And on checking this number we found that this ampul had been made in the year 1911. Twenty-nine years later its identity was still a matter of Squibb record!

What does this mean to you?

It means that on every Squibb product you have two assurances of quality. One is the Squibb name. The other is the individual control number. Under this number the Squibb Laboratories file a complete record of the product's making—raw materials, names, dates, tests and samples of finished product.

This system of rigid control through every step of manufacture on every product makes certain that the product meets Squibb's exacting standards. This is true not only of professional preparations used by the physician, but also of such everyday necessities as Squibb Mineral Oil, Squibb Milk of Magnesia, Squibb Cod Liver Oil.

Look for the Squibb control number the next time you buy drug products. That number is tangible evidence of a name you can trust.

THE PRICELESS INGREDIENT

OF EVERY PRODUCT IS THE HONOR

AND INTEGRITY OF ITS MAKER

E·R·SQUIBB & SONS

Manufacturing Chemists to the Medical Profession Since 1858

Oh, so sleepy

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CANCER

FORECAST FOR AUGUST

Sometimes the patient deliberately perpetuates his symptoms for reasons best known to himself. This, therefore, throws a distracting and unnatural factor into the conditions the physician is called on to treat. Commenting on this situation, Harold Thomas Hyman, M.D., contributes an article entitled "The Emotions in Disease" in which he attempts to unravel some of the twisted threads these patients knowingly, or unknowingly sometimes, present.

One of the most insidious maladies that affects workers in certain trades is silicosis, a disease of the lungs that is acquired from continually breathing the not-too-fine dust of sand. Carey P. McCord, M.D., traces the history of this disease among the workers of an old grindstone mill and among today's laborers similarly employed with modern abrasives.

"To become paralyzed or stricken with sudden inability to move or to use any limb of the body is one of the most trying experiences in the drama of life." So opens the article entitled "The Treatment of Paralysis" written by Richard Kovacs, M.D., for the August number. Dr. Kovacs then proceeds to outline the approved methods of coping with the various factors and forms of this disease. Here is an article that will fully explain and greatly simplify all the conditions inherent in paralysis.

Among other important features next month will be "Deadly Disease Number 7: Congenital Diseases of Children" by William I. Fishbein, M.D.; "Facts and Superstitions of the Menopause" by Milton L. Miller, M.D.; "We Call It Allergy" by Lois Mattox Miller, and "To Sleep—or Not to Sleep" by Doris W. McCray.

HYGEIA

THE HEALTH MAGAZINE

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Unsolicited manuscripts will be considered by the Editor but must be accompanied by a stamped self addressed envelop to insure return if rejected. Manuscripts should be typewritten, double-spaced, and the original, not the carbon copy submitted. All rights reserved.

FACTS...

for the safety of your eyes under summer's sun!

WHAT YOU SHOULD KNOW ABOUT SUN GLASSES

WHAT KIND OF SUN GLASSES ARE HARMFUL?
Those made from "blown," "pressed" or inferior quality lenses often contain imperfections such as bubbles, wavy surfaces which cause headaches and eye-strain.

WHAT KIND OF SUN GLASSES ARE SAFE?
First quality absorptive lenses, made by reputable manufacturers and available in good optical establishments, are *safe.*

WHAT KIND OF SUN GLASSES ARE BEST?
Those with lenses made from scientific ophthalmic glass and then optically ground to your prescription, or "plano." Lenses should also be selected as to the type and amount of light absorption they provide. For outdoor wear Soft-Lite Lenses are available in two sport shades, each of a different density to suit individual needs. These scientific absorptive lenses of finest ophthalmic quality give best sun protection.

Some sun glasses may hurt rather than help your eyes. Bright sunlight intensifies imperfections in ordinary "pressed" or "blown" colored lenses. This naturally affects vision . . . often causes unpleasant after-effects. By all means abstain from wearing goggles of this type.

If you regularly wear glasses, enjoy the safety and comfort of your own prescription ground in a scientific absorptive lens especially designed for outdoor wear.

If you do not wear glasses, give your eyes the clear vision and the *safe* glare protection best provided by first quality scientific absorptive lenses. In your case these can be ground "plano" (no focus).

To be sure that your eyes will be provided with the type of sun glasses which is best for them, always go to a reputable optical source.

Soft-Lite Lenses, made by Bausch & Lomb for the Soft-Lite Lens Company, are available exclusively from Soft-Lite Licensees—a carefully selected group of skilled refractionists and dispensing opticians, right in your own community.

Published in the interests of better vision by
Soft-Lite Lens Company, Inc., New York, Toronto, London.

"To See What I Could See". . .

in Hygeia ads

Looking for buried treasures was once a favorite, if seldom fruitful, pastime for many of us in our youth. And . . . well, that exploring instinct has set me digging up some real treasures from the pages of HYGEIA advertising. "Finds" that may just possibly have escaped even your eagle eye.

For instance, did you note that the Metropolitan Life Insurance Company is this month offering a free booklet on "Appendicitis"? Judging by all previous standards, I can assure you it's worth getting.

And speaking of booklets, there's one for the asking that should send mothers of thumbsucking children scurrying to the mailbox. It's put out by the Child Welfare Guild, makers of Bitex. A most helpful little book, they'd be glad to send you free.

A penny postcard will bring you a free trial size jar of Arrid, the safe new cream deodorant that stops perspiration. And with summer just warming up, what better time to get acquainted with Arrid?

How to get the most in flavor and real food values out of those wonderful fresh vegetables now in season? I suggest you get a line on those grand new pressure cookers advertised in this HYGEIA — Vischer Products "Flex Seal" line and National Pressure Cooker's "Presto". Full information is yours without obligation.

If you've never tried Tampax, for 10c why not let your woman's curiosity get the better of you. Send for a trial package and learn about this new accepted method of sanitary protection.

Ask any mother of a tiny tot and she will tell you that at best toilet training is not easy. It takes people like the Carlson Manufacturing Co., makers of that cute, sturdy Doo-tee Nursery Seat to simplify the problem. Send for their attractive descriptive folder.

To nurse or not to nurse your baby may still be a question, but the modern mother who *does* should certainly be acquainted with the Modern Mother Nursing Brassiere made by the Venus Corp. A postcard brings you complete details.

The Moran Shoe Company have an offer specially attractive to doctors interested in baby shoes. They will send a pair of Wee Walkers, correct shoes for baby feet, to any doctor writing in on his prescription blank or letterhead.

And the Kleinert Rubber Co. offers a free sample of their completely disposable diaper pads to any nurse wanting to test it for softness and absorbency.

As a winder-upper let me suggest a delightful new kind of vacation—one that's really restful. Hold all plans until you've written Battle Creek Sanitarium for their "Vacation Suggestions" and new low rates to match your pocketbook.

That's it!

THE ADCOMBER.

See advertising index for page references.

Who's Who IN HYGEIA

ROBERT H. KENNEDY, M.D. became intensely interested in fractures during twenty months' service in France in the late war. One of his methods of "relaxation" for many years has been attempting to interest the public in the proper initial care and transportation of broken arms, legs and backs. To this end, he has written "Emergency Care of Broken Bones" on page 599.

ALLEN S. JOHNSON, M.D., a Rhodes Scholar, has academic degrees from Yale, Oxford and Harvard universities, receiving his medical degree from the last. He also studied at the Trudeau School of Tuberculosis at Saranac Lake, N. Y. Dr. Johnson's article "Advice for the Diabetic" appears on page 624.

From **S. R. WINTERS** HYGEIA has published quite a few manuscripts, one of which is "Battling Wood Ticks" starting on page 607. Mr. Winters has been writing for publication since he was 12 years old, when he contributed local obituaries and birth notices to the county paper. After graduating from the University of North Carolina, he settled down to free lance writing, which now approximates thirty-five consecutive years.

He says, "A surging restlessness—born of insatiable ambition and ill health—is a continuing reason for my keeping my wagon hitched to Emerson's star. Dedicated to the inescapable belief—that facts outshine fiction and that factual writing is more fascinating than detective stories. . . . Moreover, scientific writing in popular style is not incompatible with accuracy."

HELEN MORGAN has been writing for newspapers and magazines for eight years, and she has one book to her credit: "You Can't Eat That!" which tells you what you *can* eat if you are allergic to certain foods. Her present interest is the dissemination of knowledge about health. Miss Morgan's article appears on page 613.

LETTERS FROM *Readers*

Suicide

To the Editor:

Please see to it that Douglas E. Lawson does not read Freling Foster's column, "Keep Up with the World," in *Collier's* for April 6, 1940. If he does, he may commit suicide, for they publish a statement: "The suicide rate among married men and women is twice as high as that of single adults," in flat contradiction of Dr. Lawson's: "Another interesting fact is that unmarried persons commit suicide more frequently than do the married," which appears in his article "Why Man Commits Suicide" in HYGEIA for April 1940.

Some one must be wrong. I've also written Mr. Freling Foster, and in closing asked him if he'd send me $5 for the information that saloon keepers and brewers head the list of suicides, with clergymen at or near the bottom, and I gave Dr. Lawson's article as my source. I hope he won't mind.

VIRGINIA C. MORROW

Middletown, Pa.

>> The preceding letter was sent to the author of the article, who replies as follows:

To the Editor:

Most of my data are taken from the government's two publications, "Mortality Statistics" and "Vital

(Continued on page 660)

When fun can lead to a funeral

BILL HOWARD likes to join the kids in a game of ball. The solid crack of ash on horsehide is still a thrill to Bill—but running out the hit is something else again.

For Bill Howard—and his heart—are 47 years of age. And lately, as exercise steps up his breathing, little twinges of pain have been tapping him on the chest. "It's nothing," he likes to tell himself. "Just a touch of indigestion."

Pausing on first base, the brief flurry of pain subsides. Its duty is done—its warning unheeded. And nothing serious may come of it—*this time* . . . or the next. But *some* day, Bill Howard may take his bat to the plate once too often, and there's likely to be a funeral—years ahead of its time.

For Bill Howard and those in his age group—45 to 65—yield the heaviest toll to heart disease, America's Number One scourge today. And sadly enough, a large percentage of these men would have stood excellent chances of living out their normal span if they had done one thing: *visited their doctors in time.* But they were "too busy," or too confident, to take this one simple step.

Heart strains, or warnings thereof, are likely to occur in the late spring or summer. This is because warm, sunny days offer powerful temptations to forget one's age in the matter of exercise. *Right now*, therefore, is an excellent time for every man over 40 to have his heart checked by his physician.

The very words, "heart disease," strike terror to the mind. And yet, in the vast majority of cases, this terror is needless. Your own doctor will tell you that most heart symptoms—chest pain, "heart hurry," shortness of breath—may be mere reflex actions induced by minor disturbances elsewhere in your body.

But let *him* decide. If nothing is wrong, your fears are banished. And if conditions indicate that further attention is needed, you'll be *years* ahead of the game by finding it out *now!*

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PARKE, DAVIS & COMPANY
Detroit, Michigan

The World's Largest Makers of Pharmaceutical and Biological Products

SEE YOUR DOCTOR

Ewing Galloway

Avoid overexposure to the direct rays of the sun. Gradual exposure, beginning with a few minutes the first day, and working up to an hour after two weeks may not be harmful. The skin now needs special care. For sunburn, the use of soothing creams will give maximum comfort.

HOT WEATHER HEALTH

HEALTH in the hot season is largely a matter of moderation. Following are fourteen points with which you can keep cool, comfortable and calm.

1—Don't overwork.
2—Don't overplay.
3—Don't overeat.
4—Avoid excess of alcoholic drinks.
5—Wear light, loose clothing.
6—If you can do so, take a nap at noon or rest as much as possible during the day.
7—Drink plenty of water or cold nonalcoholic drinks, if water is distasteful.
8—Avoid fats and excess of sugars and starches.
9—Eat plenty of fresh vegetables and fruits.
10—Avoid overexposure to the direct rays of the sun. Gradual exposure, beginning with a few minutes the first day, and working up to an hour after 14 days may not be harmful.
11—Drink no water unless certain of the safety of its source.
12—Avoid food that has not been properly refrigerated.
13—Eat nothing of which there is the slightest suspicion that it may be spoiled.
14—Don't get MAD; keep cool.

The chief abomination in hot weather is tight clothing. A pair of heavy shoes can make you feel extremely uncomfortable in hot weather, particularly if they are tight. In the tropics, doctors advise the discarding of belts and the wearing of suspenders in the hot season. They particularly encourage women to discard corsets, girdles and round garters and, indeed, any tight clothing. Free circulation of blood is essential to health.

The skin is probably the most important organ in the body in relationship to hot weather. Proper care of the skin involves frequent washing because the skin will accumulate dirt more rapidly in summer than in winter. Perspiration serves as a means of fixing dirt on the skin. You can aid evaporation of perspiration from the skin by wearing light clothing and by keeping the air in motion. Air that is in motion will cause fluid to evaporate more rapidly from the skin than air that is still.

Most of the illness in summer nowadays is associated with excessive indulgence in food; carelessness about the freshness and sanitation of food, water and milk; and, finally, overdoing. The golfer, instead of proceeding gradually into the summer season, begins doing twenty-seven to thirty-six holes the first week. The tennis player plays until he drops. The person who goes for a tramp in the woods is careless about poison ivy and does not realize that the farther he walks, the longer will be the distance home. The oldest proverb in hygiene is "moderation in all things." To this we add, ". . . especially in summer."

How to Remove

OF ALL the skin conditions that a dermatologist [skin specialist] treats, superfluous hair in women is one of the most important, because of the self consciousness and mental depression which accompany this condition. I know of no skin condition which causes more introspection and discouragement on the part of the patient than does excessive growth of hair.

Superfluous hair is the growth of hair in excess of the usual amount on any part of the body. A woman suffers from superfluous hair when coarse hairs appear on those parts of the body which normally give rise to soft, downy hairs.

Superfluous hair in varying degrees is relatively common among women. This condition is repugnant to them because it is a masculine characteristic, and its presence leads them to think that they do not follow the female type. They become morbid, seclusive and shun society, if cure for their distressing condition is not in sight.

There are two types of excessive hair growth, the congenital [present at birth] and the acquired. The hairy mole is an example of the congenital type. The acquired type is seen most frequently in women from the time of adolescence until after the menopause. The brunette woman is apparently more frequently affected than the blonde. As a woman grows older, the fine lanugo or baby hairs sometimes become thick and coarse and closely approximate in appearance and texture the hairs seen on the bearded region of men. The common sites are the upper lip, the sides of the chin, the cheeks, the front of the neck, the chest over the breast bone and the breasts. The forearms, legs and thighs may also be affected.

There are three types of hairs; first, the downy, unpigmented, lanugo hairs; second, the coarse, dark, strong hairs, and third, the stiff, short hairs or vibrissae seen in the nose and ears. The exact cause of the acquired type of superfluous or excessive hair growth is unknown. The tendency is most probably

Superfluous Hair

By MAURICE J. COSTELLO

inherited. A woman having excessive hair growth on the face frequently resembles her father or has his type of skin.

There are many theories as to the cause of excessive hair growth. First, one of the beliefs is the ill-advised treatment which causes undue stimulation of the blood supply to the hair roots, resulting in their overnutrition and increase in growth. Severe acne may be followed by excessive hair growth. Occasionally, the cause of superfluous hair is ascribed to some derangement of the internal glandular or endocrine system, but gland treatment has been of no value in curing this persistent condition.

The patient who has superfluous hair, or a tendency to it, should be instructed in the proper care of her skin, and this is especially true of those suffering from acne. No mechanical procedure and no locally applied medicament which causes irritation or inflammation of the skin should be employed. "Do cold creams and petrolatum cause increase in hair growth on the face?" is frequently asked by women. The answer is "No." At least these products were never known either to prevent or cure baldness.

The internal treatment of superfluous hair, whether by mouth or injection, is worthless.

The methods of temporarily removing superfluous hair are as follows:

1. Removal by forceps or tweezers.
2. By rubbing the skin with a fine variety of pumice stone or a mitten made of carborundum.
3. Various chemical depilatories and epilating waxes.
4. The razor and electric dry shaver.

The use of the electric razor has the advantage of removing hair with the least possible irritation of the skin.

The epilating waxes cause temporary removal which is of longer duration than other methods. These are frequently made of beeswax and rosin. The wax is melted and spread over the affected area, allowed to cool and harden and is then removed quickly.

Depilatories have for their active ingredient, barium sulfide, which chemically dissolves the hair above the pore openings. These depilatories may cause unpleasant irritation and redness of the skin, which may persist for several days. The powder is mixed to a paste with a small amount of water. It is rubbed on the skin and permitted to remain in contact with it for several minutes, at which time the softened hair can be rubbed off.

Bleaching with hydrogen peroxide, ammonia water and magnesium carbonate render the hairs colorless and less conspicuous. This is often used when the presence of the hair itself is of no consequence, as long as it doesn't show.

Superfluous hair can be removed permanently and safely only by destroying the hair roots. This is accomplished by means of the short wave high frequency current, a rather new procedure which is just developing, and by electrolysis, which causes chemical decomposition of the hair roots by means of the galvanic current.

Excessive hairs are removed more rapidly and in greater number in a given space of time by means of the high frequency current than by electrolysis. In the hands of a trained physician, the short wave high frequency current is safer than electrolysis, and there is less danger of scarring. It is also less tedious for the patient and the operator.

Both methods are harmful when performed by the inexpert or careless technician. Infection and pitted disfiguring scars result from improper technic of unconscientious, unqualified operators. Moreover, most of the electrolysis performed by laymen is on the face, where infection could be of serious consequence.

When either procedure is used, high frequency or electrolysis, a current is passed through a fine flexible steel needle which is carefully introduced into the pore or hair opening of the skin until it reaches the hair bulb. The patient is requested to lie on a table or sit in a comfortable adjustable chair. The skin of the area to be treated is prepared by cleansing with soap and water and with alcohol. With high frequency current, a moment's application to the hair root is sufficient. With electrolysis, the duration is longer and more sustained, lasting about 30 seconds for each hair root. The pain occasioned by both methods is slight and easily tolerated. Treatments should last about a half hour and be given once or twice a week. A soothing antiseptic lotion may be applied for several days following each treatment.

Because it requires a steady hand, good eyesight and great patience to use even the single needle method satisfactorily, electrolysis performed by the multiple needle method is inadvisable and impractical. The good results purported to be obtained by lay operators using the multiple needle method are exaggerated. Dermatologists who do a considerable amount of this work seldom use more than one needle.

Dermatologists are frequently called on to remove common moles and the hair growing from them. Lay operators in beauty parlors have the temerity to attempt the treatment of these conditions. Only the specially trained physician or surgeon is capable of differentiating between these common moles and the potentially cancerous type of mole which they so closely resemble.

Some years ago, the x-rays were used by quacks and charlatans for the removal of superfluous hair. When the x-rays are properly used by experienced physicians for the treatment of diseases of the skin and scalp, they are safe and of great value. But the x-rays should never be used to remove superfluous hair.

Since the permanent removal of superfluous hair by the short wave high frequency current and by electrolysis is a surgical procedure, it should be performed only by physicians or reliable conscientious technicians under their immediate supervision. The technician who assists the physician in this difficult work should have a basic knowledge of the anatomy of the skin, as well as a practical understanding of instrument sterilization and proper surgical technic.

Electrolysis was first used in 1875 by Dr. Charles E. Michel of St. Louis, who employed it for the removal of ingrown eyelashes. Dr. Hardaway in 1878 used it for the treatment of superfluous hair. Physicians have made all the advances in this important branch of physical therapy, and they have standardized the technic of its operation. Consequently, they deserve the credit for making this form of treatment available to women suffering from excessive hair.

Superfluous hair is an unfortunate abnormality which is extremely repulsive to women. Removal by means of the short wave high frequency current and by electrolysis is the only method giving permanent results, and it is safe, reliable and practically painless in the hands of the trained physician. By careful, patient treatment, even the worst cases can be cured.

Edward Rinker

In America, such luxury as this in the bathroom is commonplace.

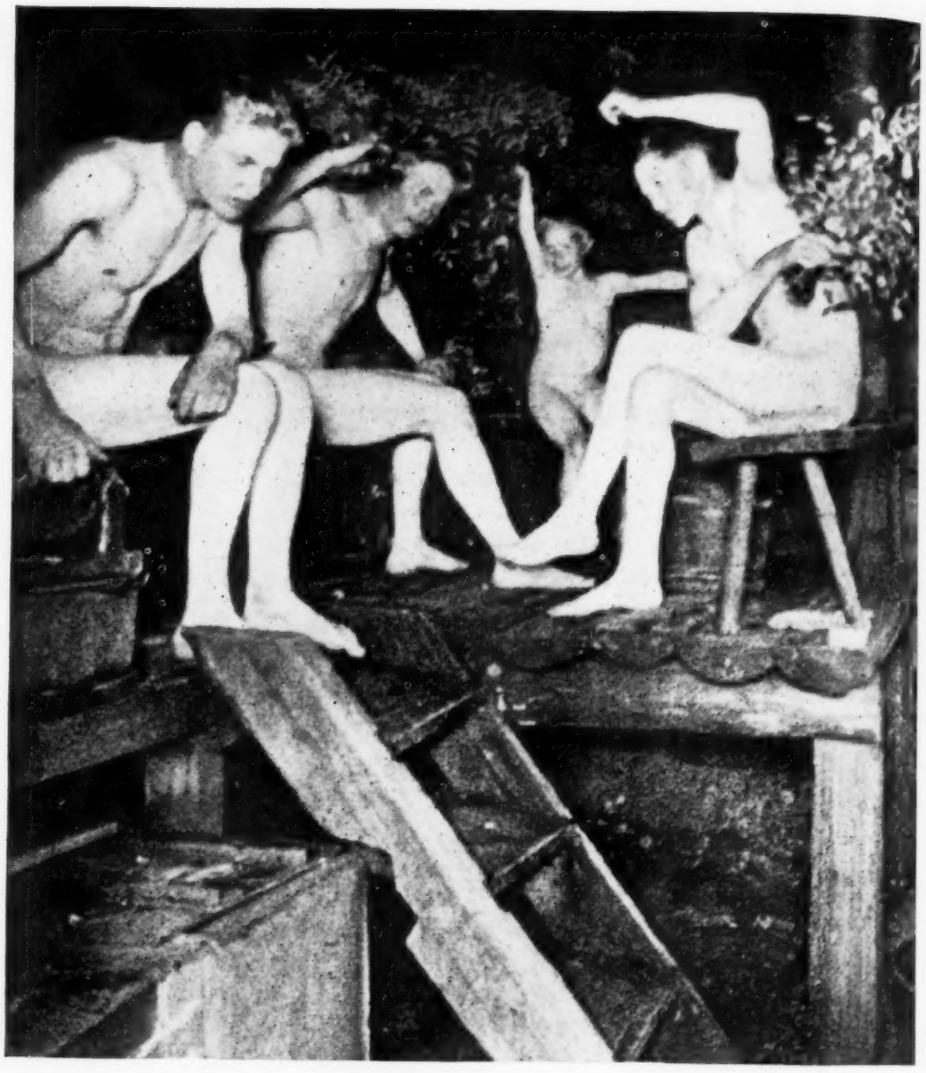
What does the "other half" do for bathing facilities, when 95 per cent of all the bathtubs in the world are in these United States? "Strange people, these foreigners," and stranger still are their bathing customs, as described here by

MILDRED BRENNAN

Strange Bathing Customs

ALL the world "comes clean"! Not perhaps with the ease and frequency that Americans do, but then the United States owns 95 per cent of the world's bathtubs. With the remaining 5 per cent sparsely scattered all over the world—here a bathtub and there a bathtub—natives of other countries manage as best they can.

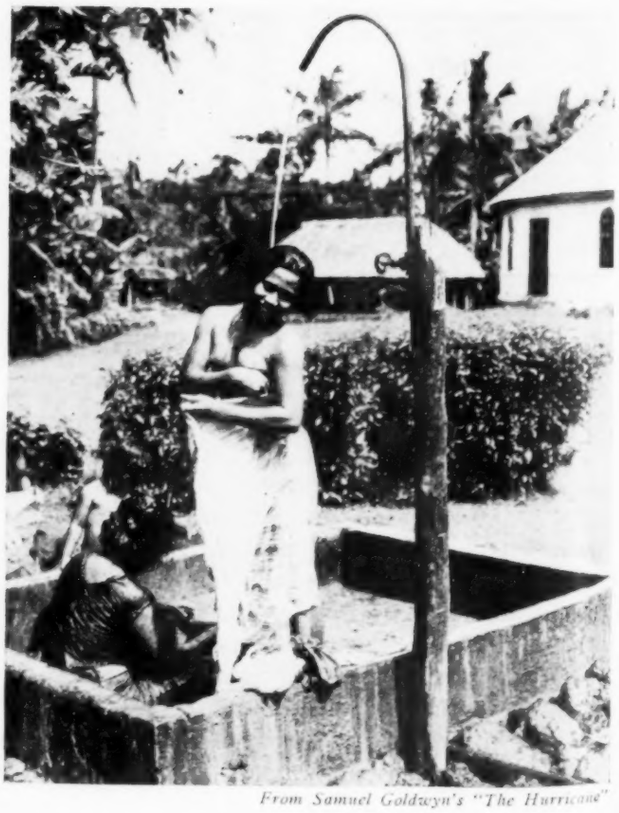
The Finns do pretty well. Practically every family has its bathhouse or sauna. This is a two room structure, one room for the bath and one for dressing. They heat stones in a stove, then splash water on the stones, causing dense clouds of steam to fill the room. The



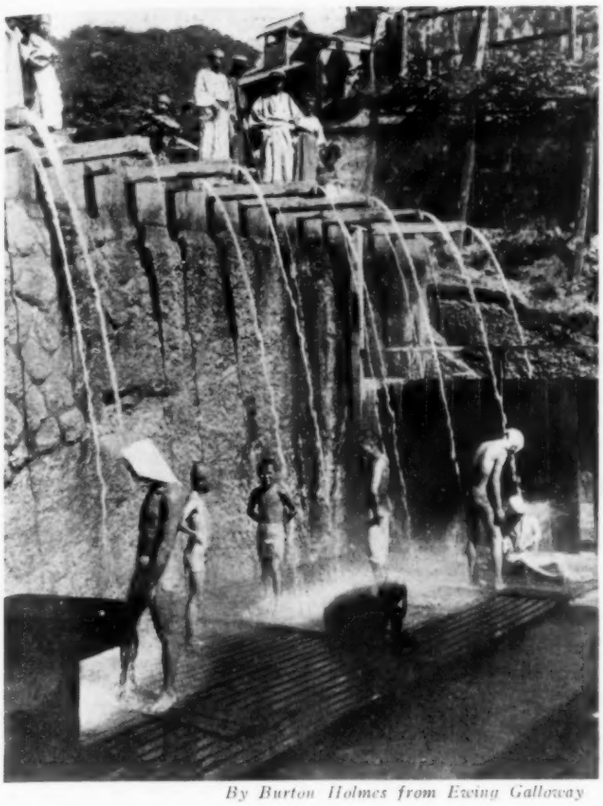
To the Finns, the log bath huts, in which they steam themselves and whisk their bodies to a glow with branches of birch or cedar, are almost as important as their homes.

In Japan, many families have this type of high wooden vat, which is accompanied by a wood or charcoal stove that heats the water for the bath. This shower, at right, was devised by natives of Samoa.

Ewing Galloway



From Samuel Goldwyn's "The Hurricane"



By Burton Holmes from Ewing Galloway

The natural hot volcanic springs in Japan also furnish a pleasant outdoor place in which to bathe. For purposes of this picture, the photographer supplied the towels with which the natives are adorned; otherwise, they bathe nude.

bathers sit in this steam. The bath can be hot, hotter or hottest, depending on whether they sit on the first, second or third roost. If they want a really hot bath, they sit up high in the room where the steam is hottest. If a medium warm bath is desired, they sit a little lower on the roost. And the least warm bath is made near the floor.

While sweating, the bather can rub himself with epsom salts or whip his body with a leafy branch as a part of the cleaning process. After that comes an exhilarating dive in a snow bank or, if there is no snow available, shower or plunge in the lake. Then possibly a massage. By that time the bather feels clean, looks clean, and believe me, he is clean.

There are 365 Saturday nights in Japan a year, for every Japanese, no matter what his social standing, bathes daily whenever possible. He bathes in his home, in public bath houses, in inns when he travels or at the hot mineral springs that dot volcanic Japan. The Japanese bath differs from the bath of all other peoples, for it is a hot water bath, often 120 F. or more. Cold baths are avoided and used only by penitents.

The customary bathtub is usually a barrel-shaped, rather high, wooden vat. It is so narrow that the bather can only sit or squat in it. It is heated by a charcoal fire in a small container placed under the tub.

Every well-to-do Japanese family has its own bathroom, and the poorer classes bathe in the public bathhouses. The family bathtub is not infrequently situated in view of the street, and the entire procedure takes place before the eyes of the passers-by without any embarrassment on the part of the bather.

Guests in a Japanese family bathe first, then follow the master of the house, the eldest son, the wife, the children and finally the servants. All bathe in the same water. This hot bath is not intended to cleanse the body, however. Before entering the tub the bather soaps his entire body and pours hot water over himself several times. He stays in the hot water from three to ten minutes and sometimes even longer. If the Japanese has time, he bathes several times a day in order to freshen up in summer during the hot season and to keep warm in winter, since the houses are often cold. On leaving the tub he is as red as a lobster.

Nearly every city and village in Japan has its public bathhouse. Formerly there was no division of sexes in these establishments; but the comments of foreigners and missionaries led to the bathhouses being divided, one entrance labeled "Males" and the other "Females."

It is true that at first these divisions were of a somewhat sketchy character. They started with a straw rope stretched across the middle of the bathing tank, then worked up through light partitions breast high, until they finally reached the foreign ideal of entirely separate bathrooms. Bathhouses in country towns sometimes have the prescribed male and female entrance, both of which will open into the same bathroom.

Generally, these public bathhouses have a covered entrance where footwear is left; then there is a disrobing room, and finally the bathroom itself, with a sloping floor for drainage purposes and the bathing tank in the center. This is from 8 to 10 feet square and about 3 feet deep, with a seat all the way around about half-way down in the tank. The tank is kept constantly full of water at a temperature of about 120 F., this being just suited to the Japanese ideas of comfort.

In the average good-class inn there is only one bathroom, which is arranged on the lines of the public bath just described, only somewhat smaller. The rule is that first arrivals

among the guests get first call on the bath—a large tub or tank—and it is understood that if, say, a mixed party of three men and two women have arrived together, they all bathe at the same time. When they have finished, the next party takes its turn and so on. Single travelers are usually ushered into the bathroom in batches of three or four.

When all the guests in the inn have finished with their baths, the household take their baths, starting with the proprietor and his wife and working down, till about midnight the kitchen hands and chambermaids get their turns. Last of all, the bath attendants will have their baths. Then finally, the bath water that has seen so much service during the day is emptied out, and the attendants will spend the rest of the night scrubbing out the tank and refilling it for the next evening's performance.

Incidentally, another of the duties of these bath attendants at a Japanese inn is to scrub the back of the bather. Since the bath attendants are usually women, the American man traveling in Japan finds this duty disconcerting. It is also disconcerting to him to attempt to explain to the polite attendant that he would prefer to scrub his own back.

Although more than 100 persons sometimes bathe in the same water, no one believes in the possibility of infection.

The volcanic nature of the Japanese country has given rise to numerous thermal springs, which are considered an important method of therapy. Most of these springs have a temperature of 100 to 125 F., and the Japanese delight in bathing in this temperature. A special feature of one bathing resort, Beppu, is the sand baths, which have been used from ancient times. At the time of the ebb tide, both in summer and winter, the bathers lie on the shore buried in damp, hot sand up to their necks, usually for four hours. Sometimes the temperature of their bodies may rise as high as 104 F.

Whereas the Roman emperor Diocletian sprawled his bath over 50 or 60 acres, the modern Roman is confined to a space 6 by 6 feet. He uses less water and less heat than Diocletian did, but it costs him more in proportion.

Most Roman houses today have plumbing, many even have bathtubs and bathrooms. But bathing is in most cases no longer a pastime; it becomes an unpleasant, shivering necessity. The hot water heater, which you generally pay extra for when you rent an apartment or a house, takes from fifteen minutes to half an hour to fill the tub.

You light the pilot flame and then turn on the water. If you turn on the water first and then light the flame, you will blow out the bathroom roof, and part of the house will fall in. You are, of course, left to the trial and error method, which becomes more interesting when you discover that the plumber has had a sense of humor of his own and has marked the hot faucet cold and the cold faucet hot. *Caldo* in Italian means hot. Automatically, an American will turn on the handle marked "C" expecting cold water. Some persons need to be scalded just once to realize this important difference.

The older German houses have no conveniences, and many of the newer ones have few enough. Yet even if there are all kinds of conveniences in a modern house, the stranger had better leave them alone. The ordinary human mind is not sufficient to their proper operation.

The washbowl in the bathroom is usually an infinitesimal affair into which one cannot put both water and hands. Besides, the faucets which serve the bowl will be placed so as to cause maximum inconvenience to the user. Instead of being put somewhere near the bowl, or even made part of it, as one would expect, they project from the wall a good ten inches above the bowl. Any one who turns on a stream of water from one of them into the bowl will get himself and everything else wet.

The bathtubs when you find them are not so bad, but they sometimes have corrugated bottoms. These are a surprise at first, and so is the position of the faucets. The faucets hang out over the tub wherever the maniac that put in the pipes thought they would look attractive and are in some mysterious way connected with a shower that shoots directly onto the floor. Yet they can be managed, with practice.

Public bathhouses in Germany, however, offer the poor people cold and luke warm showers free of charge. No soap is provided.

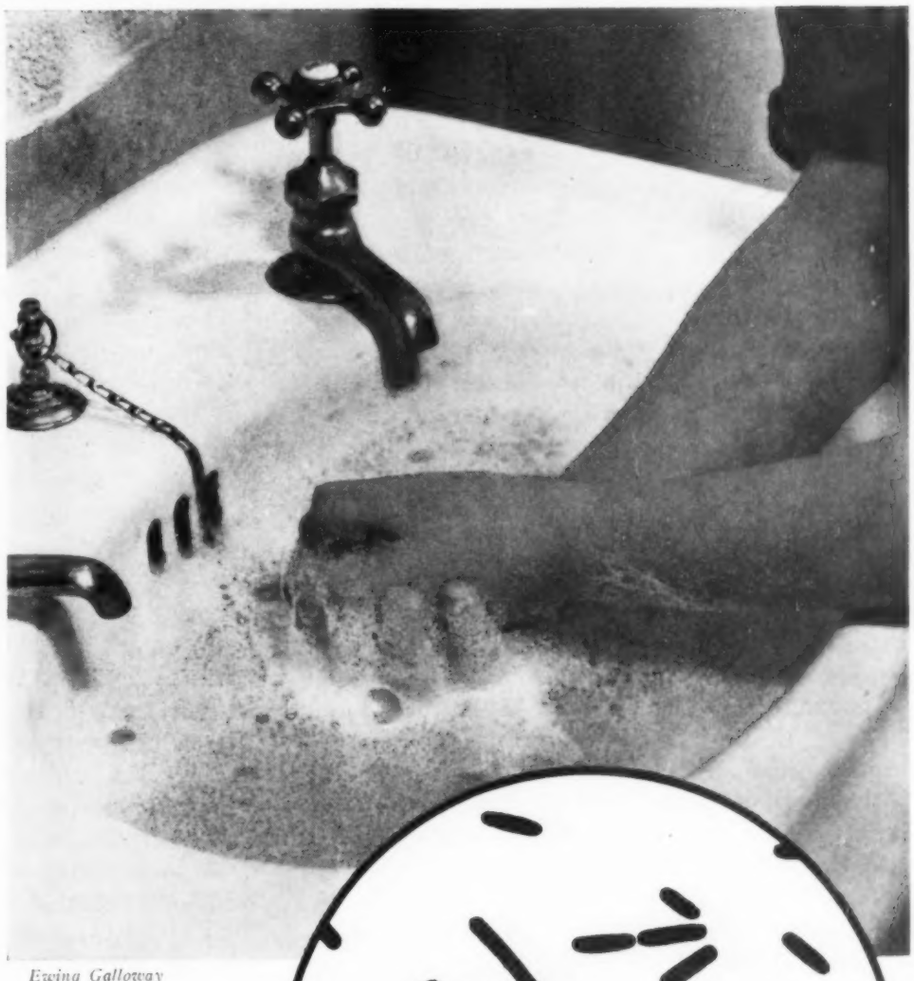
The American traveling in Europe not only dislikes to wait for his bath water to heat, but he is distrustful of the oversize towels with which European hotels supply their guests. Complaints on both of these scores are numerous.

A newspaper correspondent, home from Germany, facetiously suggests the "Outline of History" as reading matter for the time that elapses between asking for a bath and the return of the maid announcing that it is ready.

"Upon emerging from the bath a wrestling bout with the bathtowel begins," he continues. "This towel is bigger *(Continued on page 641)*

AVOIDING DYSENTERY

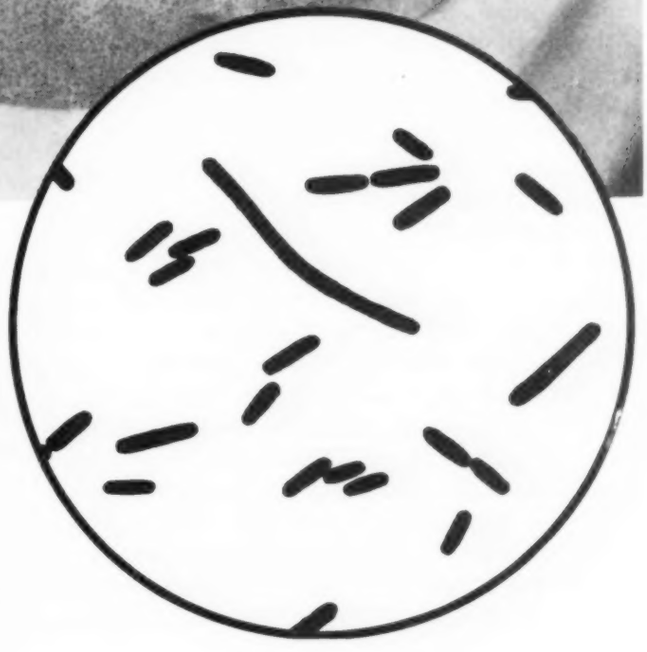
By JOSEPH FELSEN



Ewing Galloway

TWO common metaphors may be taken as the themes of a highly important health problem which concerns us intimately in our everyday life. "Living from hand to mouth" generally refers to an impecunious state. But it also signifies a common method of transmitting germs which are found in contaminated food. "Stop your bellyaching" is a vulgarism applied to persons who continually complain about one thing or another. But it may also refer to a well known phenomenon which is the result of swallowing these germs.

Strangely enough, we all live from hand to mouth, and "bellyaching" is an exceedingly common complaint among our otherwise cheerful fellow citizens. The direct cause of bellyache is frequently a germ which is so small that myriads can be seated comfortably on the head of an ordinary pin. They ride cheerfully from one place to another on the F F F, otherwise known as food, fingers and



The only way to avoid passing dysentery on to others or to protect yourself from contracting it from an infected person is to wash your hands in soap and water. The magnified germs are seen in circle inset.

flies. Of course, not all abdominal discomfort is due to this cause, but recent investigations point to the increasing worldwide incidence of intestinal infections due to germs. Of the various kinds of intestinal infections, more popularly known as "colitis," bacillary dysentery appears to be the most important, numerically speaking. It is caused by a minute rod-shaped germ which thrives in filth. It travels from the intestinal tract of one person who harbors it to the mouth of another, who thus contracts the disease known as bacillary dysentery. There is no other method of infection in humans. Of course there is usually some intermediary vehicle, such as food, including water, fingers and flies. Bacillary dysentery is many times more frequent than the other well known type of dysentery called amebic dysentery, which received so much publicity from the outbreak during the Chicago World's Fair. However, bacillary dysentery, amebic dysentery, typhoid, paratyphoid and some others are all cousins under the skin. Their source and mode of transmission are alike, so that avoidance of the factors that cause one disease will serve equally well in the prevention of the others. It is like killing many birds with one stone. Statistical studies support this contention.

It was stated that in human beings the only method of contracting bacillary dysentery is transmission of the germ from the intestine of one person to the mouth of another. For some reason, animals are immune to this method of infection. Rabbits and white mice, which are the usual experimental animals used in the studies of bacillary dysentery, must be infected by inoculating the germs directly into the blood stream or abdominal cavity. Monkeys, like man, can be infected by mouth. Man swallows the germs, and in from twelve to thirty-six hours abdominal cramps and frequent diarrheal movements occur. These are often accompanied by severe prostration and fever. If the intestine is examined at frequent intervals by means of an illuminated instrument, it is seen that there develops within the first seventy-two hours intense inflammation of the lining of the bowel with ulceration. The frequent bowel movements are due to this disordered state and represent nature's effort to rid the body of the dysentery poison. When she has succeeded in attaining this objective, usually in five to ten days, the bowel movements promptly cease, and constipation follows. Here again, nature in her wisdom splints the bowel to favor repair of the ulcers. Wise physicians know these things and attempt to aid by neutralizing the poison and supplying adequate fluids for its elimination. This is the typical case in the United States. Some are milder, others more severe. The most serious effects are seen in babies, among whom the highest mortality occurs.

In restaurants, owners and employees must exercise extreme caution in order to prevent contamination or transmission of infection to patrons. To this end, they post warning notices for their employees and frequently test the success of their methods of cleanliness. Here a specimen is being taken from a washed cup to see how many bacteria remain.

Dysentery is a completely preventable disease. Among the ancients, it was one of the great scourges. Not knowing the cause, they shrouded it with mysticism. As long as people were traveling nomads, living in widely separated, small family groups, the disease was no great problem. As soon as they flocked to what later became cities, for economic reasons or mutual protection, the situation changed. These conditions have persisted, in principle at least, down to the present. And so has bacillary dysentery. It is a "contact" disease. Remove the "contact," and you draw the powder out of the dysentery gun. What are these contacts? They may be direct, such as touching the patient or articles soiled with his excrement. They may be indirect: the three F's, food, fingers and flies. Water or other food is often contaminated by untreated sewage or by a handler of food. The food is then consumed, and the person serves as an incubator for the dysentery germs, soon becoming ill with the disease. This is not always the case. For some reason, some persons escape, possibly because they are immune or because the germs are destroyed by the acid in the stomach. Fingers and flies, like food, merely act as vehicles on which the germs travel. And speaking of travel, there are some places in the United States and many foreign countries where bacillary dysentery is constantly present. The natives appear to be immune for the most part, while newcomers are almost invariably affected. Mimicking the natives is therefore a hazardous procedure, insofar as it concerns their hygienic and sanitary habits, or lack of them. "When in Rome do as the Romans do" favors bacillary dysentery and other intestinal infections, not you.

Therefore, prevention of bacillary dysentery consists of avoiding "contact." This is not always as simple as it appears, since some persons harbor the germs without being more than

U. S. Public Health Service

mildly indisposed. Generally, however, it is a safe rule to avoid contact with people who are sick with diarrhea. Likewise, people with diarrhea should be removed from contact with healthy persons, or isolated, until the family physician has determined the nature of the illness with the aid of bacteriologic cultures. "Isolate at once, and do not procrastinate" is a simple rule which, when neglected, has resulted in much avoidable misery; when followed, it has often saved lives.

Avoid hotels, vacation resorts and other places where diarrhea outbreaks occur. "Oh," say the clerks, "the visitors always get diarrhea until they get used to the water," which should be your signal to leave at once. The average person of intelligence rarely inquires about the protective measures, such as examination of food handlers or water supply. Yet these measures are no less important than they are at home. Write the state department of health, if there is time. If not, and you are in doubt about the purity of the drinking water or food, sterilize the water by boiling, and keep it clean afterwards. Tea prepared in the same manner may be substituted for drinking water. Boiling kills the harmful germs, and the liberal use of soap and water will mechanically remove them from the skin.

"Diarrhea, dysentery and enteritis" is high in the list of major causes of death in the United States. Studies indicate that the morbidity or general incidence is perhaps twenty times the death rate. It is the great scourge of military campaigns—a fact we may soon again see demonstrated on the battlefields of Europe and Asia. Preventive measures have been most effective among the protected age groups, or infants. But if the same measures were applied to older children and adults, there would be a noticeable drop in both morbidity and mortality from these diseases.

Summer's Here!

THE ONLY THING that the words "Summer Vacation" convey to many parents is the fact that the children will be underfoot all day long and have to be amused and humored and punished. Indeed, the chances are that before a week of the summer vacation is over, the children will be bored to tears and wishing they were back in school, and the parents will be counting the days until school opens again. This is all wrong. Vacations ought to be good fun for the parents as well as the children. Perhaps the quickest and easiest way to make them so is to consider ways and means carefully, and then, in a joint conference, plan good times which can be enjoyed by the whole family.

Of course, when trips by motor, train or boat may be indulged in at a moment's notice without counting the cost in time or money, there really is no vacation problem that cannot be solved by a travel agency and plenty of airplane luggage. But if getting away even on a two week's vacation trip with the children is a real problem, then vacation suggestions which can be practiced at home are really welcome.

A child can get a whole summer vacation's fun out of his camera, a set of developing materials and some water color paints. If he takes his pictures carefully, colors when desired and mounts them well, he will be ready for Christmas in September, just waiting to be complimented on his original and lovely work. If linoleum prints, finger painting, embroidery, weaving, basketry or simple punched brass or burnt woodwork do not fill the bill in your case, consult any of the department stores' art departments either in person or by mail, and you will be thrilled and excited by the fascinating things which are easy enough for your child to do for fun, and which are attractive and useful enough to be given as gifts later on.

Craft materials cost money; but if you buy one set, you may soon find out that there are

By REGINA J. WOODY

ways and means of achieving the same or even better results with materials which have been locked in trunks in the attic for years on end, or they may be bought in quantity from the wholesaler. Some parents keep a dime bank for each child on the child's own bureau, placing it there the day school opens, and in it he is encouraged to place a dime or two of the money he receives on birthday or Christmas or as an allowance. Supplemented occasionally by a dime from father's pocket when he comes upstairs to say good night, or from mother's purse when an ice cream cone was missed, ten months will usually provide a five dollar craft fund for each child's summer work. It is not an original way to save money, but for each little child it is a new and fairly painless method of getting the wherewithal for his summer craft materials.

There are many things to be made if a child sews fairly well, such things as gay pot holders, pretty hemstitched dish towels with appliques, bean bags and doll's clothes. Leather work often appeals to boys, and they can also do really good basketry; if they are set at big baskets, they can turn out an incredibly fine looking piece of work. Don't choose small, fussy things. Have them make big wood baskets for fireplace logs or a waste basket for Dad's desk. Boy fingers can do big things better than little things; and although the first cost may seem high for "play work" for the summer, if you make sure that a certain time set for that play work is utilized, your child will soon have a desire within himself to work and create something of beauty which has a tiny bit of soul in the making of it. An hour a day is about enough, although it is possible for many children to enjoy two hobby hours if the things are different enough, as for instance drawing and basketry. Painting and sewing, linoleum block printing and knitting

will often fit well into the work skills of certain types of children.

Every child should be taught as soon as he can read easily to keep an "Interest file." Any old shoe box with his name on the cover is good enough to start with. In it let him tuck any picture or poem or story he really likes. By the time he gets to the eighth grade, get him a larger file, and he can then begin saving booklets, pictures and clippings which will prove of real value for inclusion in the notebooks which he must make in school. Soon these files may even show which way he is heading in life and may perhaps point the way to special training. It seldom pays, with any child less than a genius, to try to make him keep a scrap book of related ideas; but a jumbled, happy mass of clippings of his own choosing will amuse him on any rainy day, and they are a godsend when he is ill; and the idea of doing something like making a scrap book is really welcome. Finished books are seldom what they were expected to be, of course; but if they are fun in the making, that is more than enough to pay for the trouble of keeping clippings or picking up the pieces which their making occasioned.

Five days a week are sufficient for summer work; other days should have other plans entirely. Drive, picnic, go to a pool or the beach. If you can't, go window shopping, eat in the park, explore the docks, museums, fish markets. Ride the ferries, take buses to new towns. Go to market in the truck, eat at a lunch wagon, see a movie. If you live in the country, try to get a few vacation days in the city. If you live in the city, try to get out onto a farm for a short space of time. If you live in the suburbs you are in luck. You can go both places and like it. If you can't abide the idea of having children visit your children, exchange them and let yours visit their parents. You will find a change of children delightful. Every one will have a change; it will cost very little, and for a couple of weeks both families will want to have on their company manners, which is exceedingly restful to all concerned.

If you have an only child, borrow one from the orphan asylum for your child to play with. These little youngsters who have had to adapt themselves to circumstances will give your child a lovely time and be in the seventh heaven of delight themselves, for such trips as you can perhaps plan in the way of beach picnics and drives into the country do not often come their way, and they will be so grateful to you that they will be as good as gold.

Be sure that you have the names of a dozen books which are just the right reading for your child and which you can draw, week by week, from the library. Remember that your child's teacher is a better judge of his reading ability, particularly in new and modern fiction, than you are. Ask her for a list. Buy a few good big jigsaw puzzles, paste and crayons, for rainy days. If you have room for a puppy, a kitten or a bird, do get one. Something alive and something to care for is a fine summer activity.

You will never regret teaching both boys and girls to make a good, comfortable bed, to sweep a room, dust or to wash dishes correctly. Don't set these things as tasks to be done every day; but once a week devote an hour to a real lesson period on that subject. Graduate them with honors with a new tie, pin or bracelet as a reward in September if they do a good piece of work which you are glad to O.K. Of course, let them help around the house as usual; but let the lessons be real bona fide ones, if you expect results.

If you are interested in the stars, flowers, trees, plants or birds, you've got the makings of an interesting summer in any one of these subjects. Books from the toy counter of the Five-and-Ten are splendid to start on, for they're vividly colored, delightfully simple and interesting. If you go to beaches, collect shells and stones and identify them later on. They'll open new worlds of interest to you as well as to the children.

Look over your back yard and see if you can play badminton, paddle tennis, croquet, bowls or horseshoes in it. If you can, the children over 12 and under 60 are all set for a grand summer. Provide several benches for "kibitzers" and half a dozen steamer chairs for weary performers.

If the children are under 12, try and provide some play equipment in a special corner, with a big sand pile and a swing. Sometimes playground equipment may be manufactured out of odds and ends by an ingenious father or uncle, though nowadays it may be purchased

quite inexpensively at any department store. A 10 foot slide which will provide happiness for many youngsters for years may be bought reasonably; even a jungle gym, the height of any child's play life, is not exorbitant in price. Foot square blocks, a big wagon and a few small cars and trucks, to be used in the sand pile, will provide many happy hours for small boys; while a big doll house, 8 by 10 feet square, furnished with a little electric stove, a small table, several chairs, a commodious bureau and a big doll's bed, as well as a real little sewing machine will provide almost unceasing activity for girls of almost any age.

Summer is a splendid time to give the child who stoops or slouches some simple corrective gymnastics; but if you can find some one who teaches the new Danish gymnastics, the children will have lots of fun. If you think the dejected posture is due to failure in certain school subjects, you might try tutoring along with the gymnastics. Sometimes a little adult help will so improve a child's grasp of a subject that he will stand straighter merely because he feels more successful. At any rate, he must want to stand up straight before he will do so. Strangely enough, it may help his posture a lot if you can find out what is bothering him and cure it. When it is cured, gymnastics will soon banish the slouch.

Try to keep the vacation atmosphere of your home free from nagging. Even if he has failed to be promoted, his studies are not so important that you would wish him to contemplate running away from home or suicide if he fails. Every so often, a child of adolescent age disappears or commits suicide. Remember that it is not only the child who is moody and who broods over things who does these things, but also the happy, carefree child who, suddenly confronted with failure, scolded and harassed on every side, magnifies that failure to such an extent that to vanish or kill himself seems the easiest way out. Usually the runaway is found; but sometimes a child is missing forever, and a suicide can take place with dispatch and horrifying suddenness. Watch

THINGS TO MAKE

linoleum prints
embroidery
baskets
burnt woodwork
rag rugs
waste basket
wood basket for logs
potholders
dishtowels
bean bags

MATERIALS TO WORK WITH

camera, developing outfit
punched brass
finger paints
water colors
craft materials
leather
yarn for knitting
jigsaw puzzles
paste and crayons
sand pile

THINGS TO DO

keep an "interest file"
read good books
collect shells and stones
take corrective gymnastics
learn to tap dance
learn folk dances and Morris dancing
learn life saving

PLACES TO GO

eat lunch in the park
just driving
for a picnic
swimming in a pool or at the beach
explore the docks
art museums
fish markets
take busses to new towns
eat at a lunch wagon
see a movie
in the woods on a hike
to Father's office
explore factories
through a cake baking plant
the Aquarium
the Planetarium
through an ice cream plant
on a ferry boat ride

GAMES TO PLAY

badminton
croquet
paddle tennis
horseshoes
cards—double or triple solitaire

yourself in vacation when you are tempted to nag. Give your child every bit of freedom you honestly can. Ignore little faults. Try and live easily and happily with your children if you want them to enjoy living with you.

Dancing is one of the finest forms of exercise. It is creative and stimulating. Where children can have lessons from a good teacher, one who knows and likes children and who strives to create grace where there was none before, beauty of line where there was awkwardness and coordination where there was only clumsiness, the child is indeed fortunate. Tap dancing is for those who enjoy the rhythm of swing. It is an invigorating and joyous experience to them; but beware of coercing a child to learn to tap if he doesn't like it. You may spoil his innate joy in classical music and, instead of freeing him, confine his spirit in musical mediocrity for life. Folk dancing is fun for all ages. Morris dancing is active and athletic enough for a grown man and is a joy to watch if well done. Early evening ballroom dancing is ideal for the teen age, for it permits delightful companionship and is an amazingly successful foil to the nervous, bored age group who are too old for group games and not yet old enough for real dances which last till after midnight. Try to break up the 15 or 16 year olds with an interesting hot supper cooked outdoors at 10 p. m. If you can, you'll have them in bed tired and happy by 11; and that's an accomplishment on "daylight" summer nights.

Sleep is important in vacation time; but even so, it is nothing to worry about. Most early teen-age children will get enough sleep if their families will only see to it that they have a regular bedtime before 10 p. m. weekday nights and are not allowed out of bed in the morning before 7. The toddler and preschool child will sleep enough for his health if he is given a rest period immediately after his luncheon lasting a couple of hours and is then in bed by 8.

If you live in a neighborhood where mothers and fathers are friendly folk, cooperative and interested in each other's activities and each other's children, you may be able to start a day camp with a different mother in charge morning and afternoon two or three days a week. It is astonishing what good group leaders may be in your own block. Mothers are often quite remarkable people. There may be a trained kindergarten teacher, a fancy dancer, a woman who studied botany as a life work and another who went abroad, all of them within a thousand feet of your home, as there is within a like distance of mine. Do you see what you've got? You've got a trained playground supervisor, some one to stage a pageant, some one to make nature hikes interesting and some one else all prepared to give you and your children fascinating lectures on the countries she's visited. Before you discard parents as useless material because they haven't a college education, you would do well to remember that most men's work really is interesting and exciting, particularly to their children who may not even know what it is Father does when he goes to work in the morning. Plan, if possible, to have every child spend a day watching his father work. They will have a respect for Dad from that time on which will mount higher and ever higher.

If their father is a doctor, let them go occasionally to the hospital with him. Let them wait in the waiting room two or three hours, let them watch the ambulances, meet the interns, chat with the nurses and see the wards. Let them ride with him when he makes calls. If he is a day laborer, let them take his lunch to him and watch him work for a few hours. They'll think twice then before they try to drag him out of the armchair to go for a walk. If he sells real estate or clerks in a store, let them watch him sell. They'll learn something about earning a living that will do them more good than all the commencement sermons on "Life" ever delivered.

City folks, as well as country folks, should remember when they are planning vacation trips that some of the most fascinating sights in the world are almost free. The ferry boats give a beautiful view of the New York skyline and of outgoing steamers on Saturday morning, and you are free to ride back and forth half a dozen times if you wish. Museums are cool and quiet and interesting in the summer, and you can eat your lunch in a nearby city park. The Aquarium and the zoo and the Planetarium are not really far away from New Yorkers or Chicagoans.

Almost every one can explore factories, for they are everywhere and will welcome you if you get up groups of ten to thirty and ask permission in advance to come. Then you may see how clothes are washed and ironed and delivered. Cake bakeries open their doors, and you view gallons of chocolate icing swirling about in a mixer, and you'll likely see hundreds of freshly baked cakes sliding down a chute from one floor to another. Watch that the children don't slide, too. An ice cream factory will explain all about ice cream to you and feed you samples till even the children let the ice cream car tinkle by without the quiver of an eyelash. *(Continued on page 640)*

Emergency Care of Broken Bones

By ROBERT H. KENNEDY

IN SPITE of all the efforts at accident prevention, we shall have this year about 100,000 accidental deaths and approximately 10 million disabling injuries. The railroads were formerly a major source of accidents. They now have only about one-tenth as many fatal accidents as they did thirty years ago. In the same period all occupational injuries have been reduced about one half. But this improvement has been of no avail against the total number of accidents, because motor vehicles are now causing ten times as many deaths each year as the railroads did thirty years ago. Accidents in the home cause approximately the same number of deaths as the motor car and about four times as many injuries.

Between the ages of 3 and 18 no disease causes as many deaths as do accidents. Disabling injuries to children can be conservatively estimated at between 1 and 2 million a year. In many of these accidents the ultimate result as regards life, loss of limb or permanent crippling depends on the first aid given. This is, and always will be, rendered by laymen. We cannot expect that doctors will be present at the site of every accident. And it is only human to try to help some one in distress. These efforts often do more harm than good, unless a person has had some training in what to do and what to leave alone. The American Red Cross conducts classes in first aid. Their teachings are safe and sane, and knowledge of their content would be a help to every one. The Boy Scouts, the Girl Scouts and other organizations train their membership along similar lines. We should all know about this work, enroll in the classes if possible and urge others to do likewise.

One of the common types of injury resulting from an accident is a broken bone. A broken bone and a fracture are the same. It is estimated that between 1 million and 1,500,000 fractures occur in the United States each year.

You often hear of a compound fracture. This does not mean that the bone is broken in more than one place. It refers to the fact that the point of the break communicates with the outside air through a hole in the skin. This opening may be made by one of the bony fragments piercing the skin from the inside. Or, as in the case of an automobile passing over the leg or in a gunshot wound, it is an opening resulting from the skin and soft parts beneath being torn by an outside object, so that the hole reaches to the bone. Because of the danger of infection, a compound is much more dangerous than a simple fracture. The latter is one in which the skin is unbroken over the site of the injured bone, so that there is no communication with the outside air.

The symptoms caused by broken bones vary with the location. In general they are pain, loss of function and deformity. In case of breaks in the extremities, all these symptoms are usually present. However, this is not necessarily true. Therefore, if a person has had an injury which might cause a fracture, he should always be treated as if he had one until an x-ray picture proves that none exists. Otherwise with a crack through the bone, but with the ends in good position, these may become displaced and hard to replace. Or in moving a person carelessly, one of the fragments may stick through muscle fiber, a large blood vessel or nerve or even through the skin.

The function of the leg is to bear weight and to allow motion at the knee and ankle. If the leg is broken, there is usually some loss of function; that is, the leg will not bear weight as it did before, or the knee or ankle cannot be moved as well. Deformity means that the part is crooked. This is well seen in the common wrist fracture, known as Colles' fracture, in which the appearance of the hand and forearm is like a reversed silver fork.

The average person should not worry about diagnosing a fracture. But he needs to appreciate that every time he sees a person who has just had an accident that he should take the victim to a doctor or hospital at once. If there is the remotest possibility of a broken bone

THIS "IS" TODAY

Tomorrow some may never see.
Yesterday no more will be.
All we're sure of is today;
Why, then, throw the chance away?

—By George F. Shepherd.

Don't move an accident victim until a doctor arrives, for you may make the injuries worse by your well meant efforts. Allow her to lie where she is and keep her warm and quiet.

being present, much time and discomfort are saved by early attention rather than waiting, even a few hours, to learn whether the condition improves. In most parts of this country an x-ray picture can be taken within a few hours, and in the meantime the doubtful case should be treated as though it were a definite fracture.

In any accident if a person has been unconscious, even momentarily, or said to have fainted, he should be taken to a doctor. There may be a concussion of the brain, with or without fracture of the skull. Again early attention means much in complete recovery and may even save life. If there is a possibility of head injury, keep the victim lying down, and move him in the same position. There is no objection to having the head raised, as on a pillow, unless the face is pale. But there is no excuse for allowing such a person to sit upright in an automobile. If he has been "knocked out" for even one minute, he should not be allowed to move about until he has been given permission to do so by a physician, after his examination.

Broken backs and broken necks are quite common, particularly in diving and motor accidents and in falls from a height. The great danger is from injury to the spinal cord. The first movements of the injured person may further damage the spinal cord, causing additional irreparable paralysis and destroy any remaining function which may have escaped. Recovery is then impossible.

If a patient complains of pain in his back, he may have a broken back. If he complains of pain in his neck, he may have broken his neck. Never lift an injured person or his head until he has told you whether he can move his legs or fingers. If he cannot move his legs, his back may be broken. If he cannot move his fingers, his neck may be broken. In both cases the spinal cord is injured. If you lift his head to give him a drink of water or if

you fold him up to carry him, you may grind the injured spinal cord between parts of the broken spine and destroy any useful remnant of the spinal cord which may have escaped injury in the accident. Do not assist or allow the victim to sit up.

He is best not moved or lifted, until medical aid reaches him. This is not always possible. If he has a possible broken back, he should be transported lying on his face; if possibly a broken neck, he should be transported lying face up. In each instance this transport should be on a board or rigid stretcher, although in a back fracture, not a neck fracture, a folded blanket will suffice. In getting the victim into position onto the support, the trunk and head should be moved as a unit while rolling him over or dragging him sidewise. Do not lift him until he is on board, stretcher or blanket, and you can lift that instead of him.

Another type of fracture presents a grave problem. This is any broken bone between the hip joint and the ankle joint or between the shoulder and middle of the forearm, that is, the long bones of the extremities. By conservative estimate, such an injury occurs about 300,000 times each year in this country.

As soon as a long bone is broken, the pull of muscles tends to cause one fragment to ride by the other. Considerable pain exists, and injury to muscle is always present, both of which cause shock. Any movement of the part in this condition causes increased pain, damage and shock. The kind-hearted by-standers try to make the person more comfortable by moving his position, straightening out a crooked leg or something. These untrained efforts may cause greater damage or even force the bone to pierce the skin, producing a compound fracture. This makes the accident many times more serious. In any necessary moving of the patient, pull should be exerted on the arm or leg to overcome the muscular pull. We speak of this pull as traction. This prevents the bones from moving about causing further damage, re- *(Continued on page 670)*

Photos, National Safety Council

TUBERCULOSIS, once the first or most frequent cause of death, is now relegated to sixth place in the tables of mortality. The treatment which has been so successful is described by **J. ARTHUR MYERS**

Deadly Disease

THE time is not far past when tuberculosis was the first cause of death in the United States, and in some parts of the world it still is at or near the top of the list of killers. The fact that it is now the sixth of the nine deadly killers of man indicates that significant progress has been made in the control of this disease. Tuberculosis is caused by a germ known as the tubercle bacillus, or microbacterium tuberculosis, which belongs to the plant kingdom. In nature, this germ multiplies and flourishes only in the bodies of animals and man. It is readily grown in the laboratory when proper temperature and food are provided. Outside living tissues or laboratories it may live and retain its ability to produce disease but does not multiply. Among birds and mammals, either wild or domesticated, there is no species in which tuberculosis will not develop when infected with this germ.

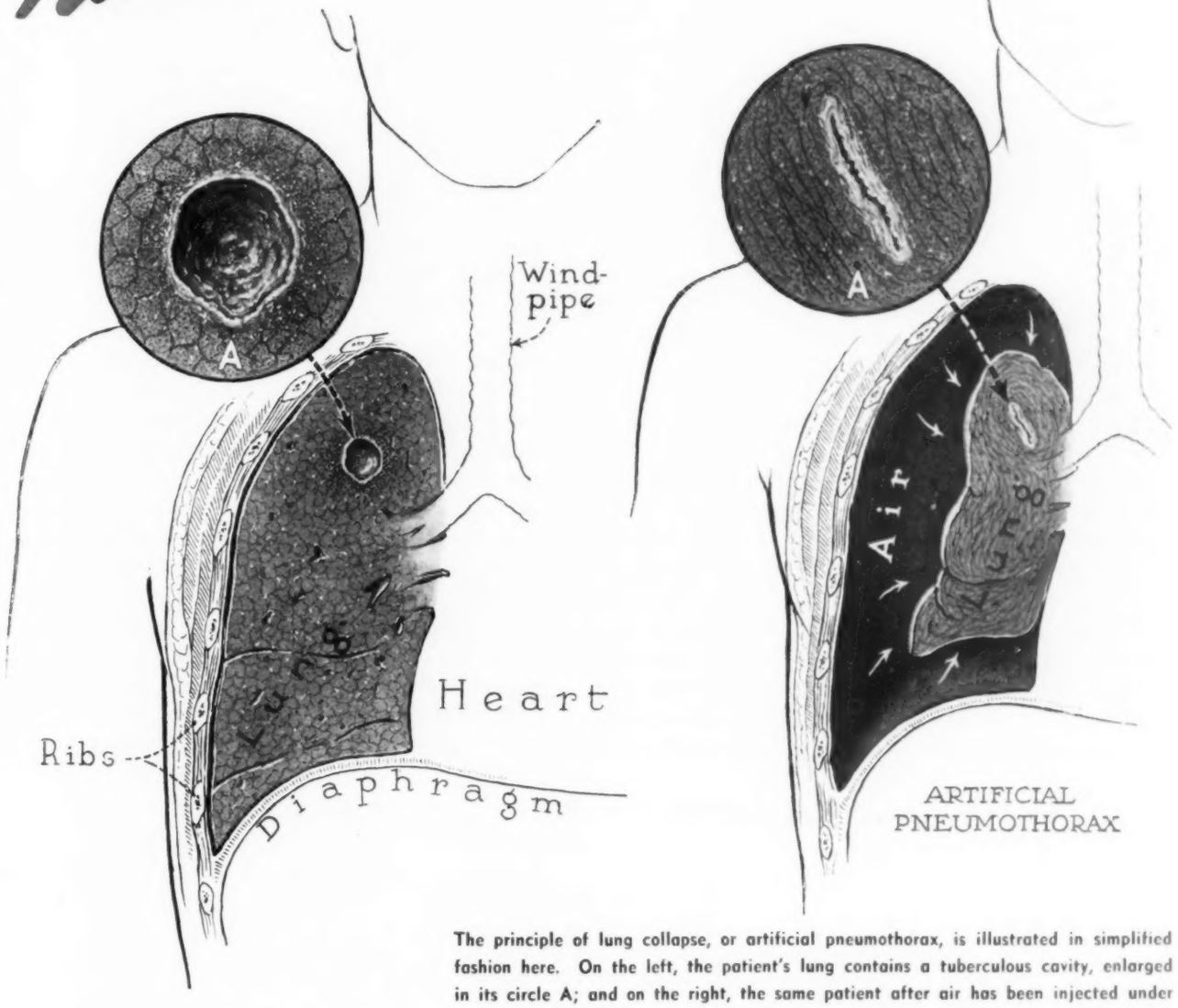
Probably all kinds of tubercle bacilli were derived from a common ancestry. Some of these germs were taken into the bodies of birds, where they adapted themselves to the temperature of 107 F.; others lodged in the bodies of cattle, where they adapted themselves to the temperature of 101.3 F.; still others were taken into human bodies and finally adapted themselves to the temperature of 98.6 F. Living in different temperatures and chemical conditions, these organisms developed characteristics by means of which they can be differentiated in the laboratory into the avian, the bovine and the human types of tubercle bacilli. There are numerous other germs which probably also originated from the common ancestry which under the microscope appear identical with tubercle bacilli, but which do not produce tuberculosis in man or animals. They are known as paratubercle bacilli.

Tuberculosis is a contagious disease; it cannot develop in the body of a person or an animal in the absence of tubercle bacilli. It is not hereditary and is rarely congenital [present at birth]; therefore, contact with a person or animal who has it is the principal factor in its development. Tubercle bacilli enter a body, in which they have not previously existed, through direct or indirect contact. The tuberculous chicken may spread its disease rapidly to chickens and other fowls. The avian type of tubercle bacillus also thrives in the tissues of swine, but it produces significant disease only rarely in cattle and man. Likewise, cattle with tuberculosis transmit their disease most readily to other bovines. However, the bovine type of tubercle bacillus is capable of producing significant disease in a wide range of animals, such as swine, dogs, cats, wild carnivora, sheep, goats and horses. An important fact about the bovine type of tubercle bacillus is that it causes serious and killing disease in man. The transmission may be direct from cattle to man through contact, dairy products and meat, or it may be through an intermediary host, such as the dog, the cat, the goat, the horse or the hog.

The human type of tubercle bacillus is the main cause of tuberculosis in the human body. A person who has the disease spreads the germs to those who have not previously had it, usually by direct contact. The human type of tubercle bacillus also causes disease in monkeys, hogs, dogs, cats and other mammals. Thus, the solution of the tuberculosis problem in any species of animal is complicated, because the disease may be transmitted to or from other species.

The tubercle bacillus has been disseminated to practically every part of the world, and wherever it appears in man, it is likewise found in his animals. There is no race or nationality—from the most primitive jungle dwellers to the most intelligent, highly educated and civilized people—in whose bodies

Number 6—



The principle of lung collapse, or artificial pneumothorax, is illustrated in simplified fashion here. On the left, the patient's lung contains a tuberculous cavity, enlarged in its circle A; and on the right, the same patient after air has been injected under his ribs. Its effect on the cavity is seen in the enlarged circle A at the right.

tuberculosis cannot develop if tubercle bacilli of either human or bovine type enter.

After the tubercle bacillus enters the body of a person or an animal, it multiplies into large numbers without causing pain or discomfort and without changing the appearance of its host for a period of months or years. By the time the host is ill, bacilli are usually being eliminated, and chance may implant them in the bodies of other persons or animals. Thus, in this insidious manner the tubercle bacillus has perpetuated itself in the bodies of human beings and animals for ages. Recently man has learned two important facts: First, when tuberculosis causes definite illness, it is usually well advanced, and tubercle bacilli are already being disseminated to other persons; second, modern methods of examining the living body enables one to detect tuberculosis long before it causes illness or becomes contagious.

The old methods of determining the presence of this disease, such as the existence of symptoms like fever, loss of weight, fatigue and cough; the physical examination, such as listening over the chest with a stethoscope, and the finding of tubercle bacilli in the sputum are inadequate today. With rare exceptions, the disease is well advanced when diagnosis is possible by these methods.

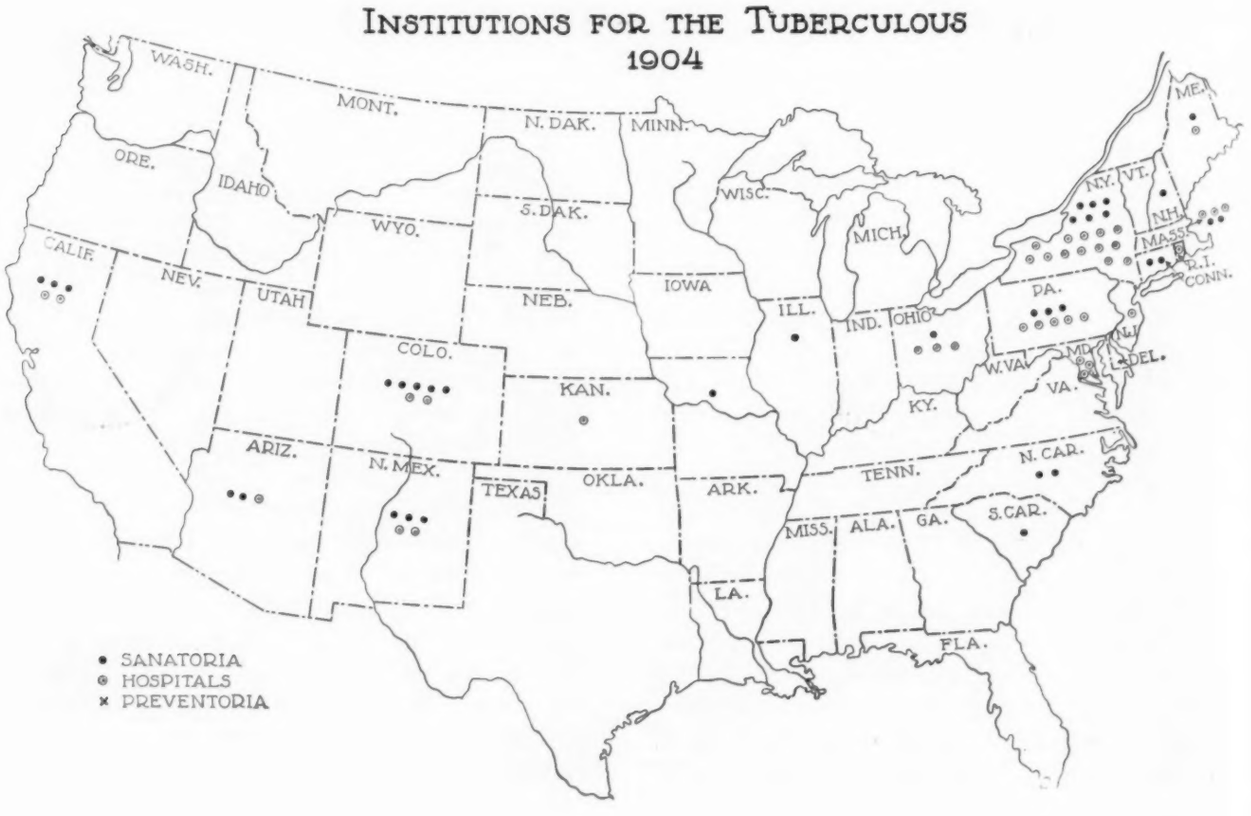
The tuberculin test detects the presence of tubercle bacilli in the human body within a few weeks after they enter. Millions of these tests have been applied to human beings in the United States alone. Since 1917 this test has been administered to the cattle of this country over 217 million times. More than 3,700,000 cattle which reacted to the test have been slaughtered, and definite evidence of tuberculosis was found in a high percentage of them.

The tuberculin test is now considered the most accurate test that is available for any disease. Numerous methods have been devised for its administration, such as applying the tuberculin to the surface of the skin, applying it to a superficial abrasion of the skin and introducing it into the layers of the skin. The last is the most satisfactory method from all points of view. It is known as the intracutaneous or intradermal tuberculin test of Mantoux. If tubercle bacilli are present anywhere in the body, a characteristic reaction appears at the site of administration within forty-eight hours. The test is harmless, and it detects the presence of tuberculosis even though the areas of disease are microscopic.

Since only tubercle bacilli cause tuberculosis, obviously only those who have them in their bodies, as indicated by the tuberculin test, are at the moment in danger of becoming ill from this disease. These persons must be carefully examined periodically in order to determine whether their disease has reached such proportions as to jeopardize their immediate future and has become or soon will be contagious to others. The best way to determine this fact at present is to examine the lungs with the x-ray to locate areas of disease long before other methods are of any avail. Not all areas of disease which obstruct the x-ray and thus cast shadows are tuberculous. The determination of the kind of disease must be made by other methods of examination, which are readily available to physicians.

Although tuberculosis frequently develops in other parts of the body where it may be extremely serious to the individual, tuberculosis of the lungs is the most important, since tubercle bacilli may be eliminated through the trachea and the mouth and thus spread infection. One appreciates the great importance of preventing the spread of tubercle bacilli to the uninfected when one realizes that after tubercle bacilli have entered a human body there is no drug or mechanical procedure that will destroy them. Even the defense mechanism of the body is apparently of little avail in actually killing tubercle bacilli; but it can render them harmless by forming walls around them.

An infection with tubercle bacilli is a serious matter. We know that among tuberculin reactors who are apparently well at the moment they are examined, an alarming number at some time become ill. In one group of children who reacted to tuberculin at the average age of 8 years when they apparently were well,

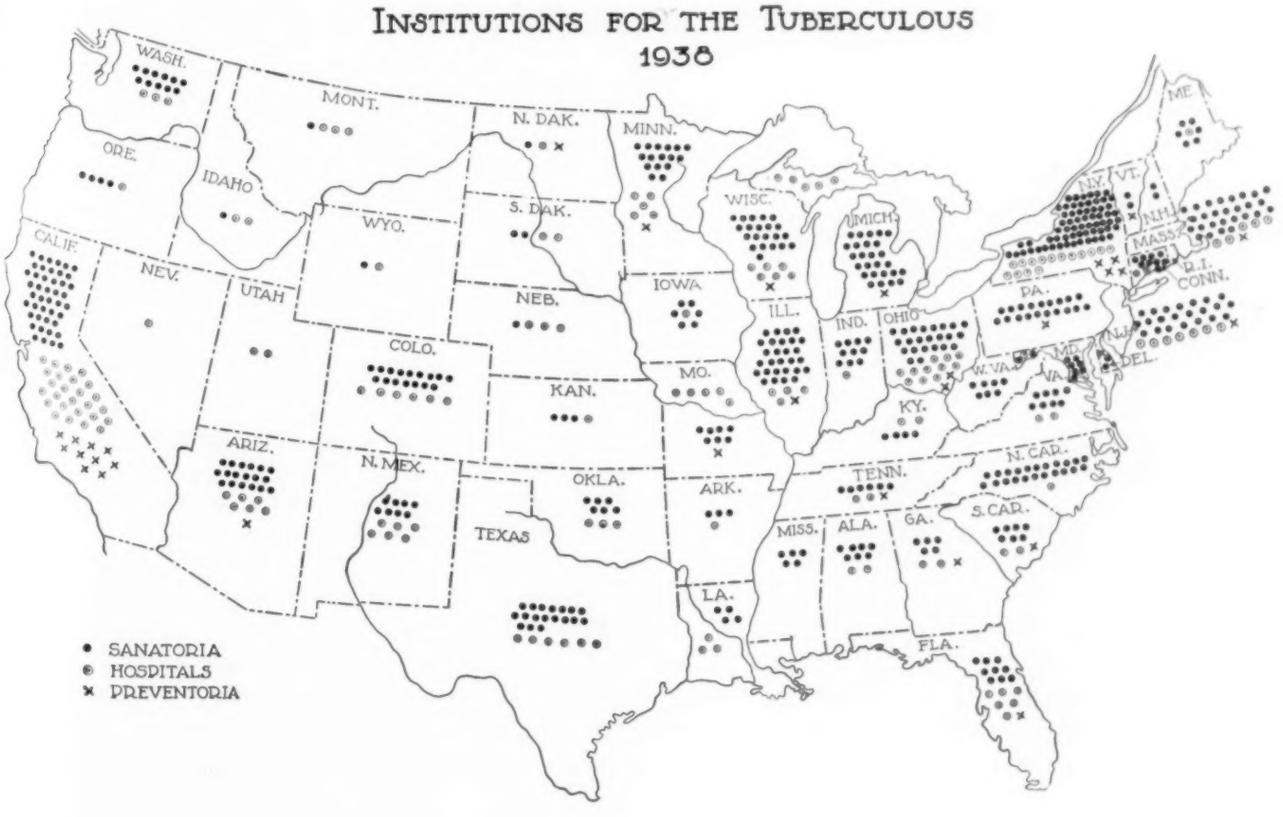


15 per cent were ill or dead from tuberculosis by the time the group had or should have attained the age of 25 years.

From 5 to 10 per cent of the deaths in this nation are caused by tuberculosis, and there is good evidence for the statement that 50 per cent or less of our total population is infected with tubercle bacilli. Many cases of the disease are brought under control by the natural defense of the human mechanism; others may be successfully treated. It is probable that more persons belong to these two groups than to the group which dies. This and additional evidence indicates that from 25 to 50 per cent of the persons who become infected with tubercle bacilli will at some time have significant disease in one or more parts of their bodies.

When tubercle bacilli enter the human body, one never knows how much destruction of tissues and organs will ensue. They may be promptly walled off and never incapacitate the host; again, at any moment they may break their prison walls and produce new areas of disease which may vary from that which incapacitates slightly or not at all to that which takes life.

The program of tuberculosis control of the National Tuberculosis Association, the American Medical Association and their allies is already bearing fruit. For instance, in 1904, 202 persons died of this disease for each hundred thousand living. The majority of deaths occurred in homes. Patients went through all the stages of the disease and died as consumptives with almost no protection for their associates. The result was that whole families and communities became infected. It was not uncommon for every member of a family to die from it. The tubercle bacillus was sowed and cultivated without molestation. The need for isolation of persons with contagious tuberculosis was recognized, but there were few places to which they could be removed. The building of sanatoriums was started, and some general hospitals opened their doors. Progress was slow in the beginning, but through educational work the program gained momentum, so that today the number of sanatorium beds in this nation is slightly less than 100,000. In addition, a large number of general hospitals have set aside space where tuberculous patients can be isolated and treated. Approximately 125,000 patients are hospitalized in these institutions each year. When one considers that every person with contagious tuberculosis may eliminate from the body many millions of tubercle bacilli daily, one appreciates the inestimable value of the sanatoriums and hospitals in controlling the spread of this disease. A bed for the isolation and treatment of each person who has the disease in the contagious stage is a necessary protection for every community. In our sanatoriums and



hospitals, treatment of the patient so as to render the disease noncontagious is always attempted.

Persons with contagious tuberculosis should be removed from the home to a hospital or sanatorium and in this way prevent spread of the infection to members of the family. This may appear as though spread of infection to members of the institutional personnel is sanctioned. But that is not true, because a widespread movement has been initiated in this country for the employment of contagious disease technic in the care of tuberculous patients in hospitals and sanatoriums, which will protect the personnel. This has passed the theoretical stage and is now in actual practice. Where it is employed, it delights the patients, as it removes their fear of spreading disease to those who care for them, and they welcome the opportunity of learning how to protect the members of their own families on return to their homes. Tuberculous patients are the most potent educators in the field, and most of them welcome information and practices to add to their armamentarium for combating this disease.

There is the occasional tuberculous patient who refuses to be isolated even for the protection of his own family. Naturally, no community can be rendered free from tuberculosis as long as such persons are permitted to disseminate tubercle bacilli to others. In some places such incorrigible persons are already being placed under quarantine and committed to hospitals and sanatoriums, where they are compelled to remain as long as their disease is contagious.

It is pathetic that a high percentage of the patients admitted to hospitals and sanatoriums have had parts of their bodies so destroyed by the disease that there is nothing to be done except to relieve as much discomfort as possible. For example, in one state over the past ten years, 90 per cent of the persons admitted to the sanatoriums had advanced disease, and 58 per cent of them died in the institutions. But even advanced tuberculosis is not always hopeless, particularly with modern methods of treatment. Strict bed rest plus local rest of a part or all of the involved lung may control the disease to such a degree that the patient's working capacity is partially or completely restored, and the disease is rendered noncontagious.

Some tuberculous patients are being trained or retrained in sanatoriums for suitable occupations. This is part of the treatment, since rehabilitation is a valuable means of encouraging and strengthening morale and must be controlled by the physician so that the patient does not exceed his physical capacity to the detriment of his well being.

The most satisfactory method of resting the lung is to collapse it by introducing air into the pleural cavity; this procedure is called artificial pneumothorax. When the diseased area is adequately collapsed, multiplication of the tubercle bacilli is held back, and the production of scar tissue is stimulated. This tissue may become interwoven throughout the area of disease and thus prevent further spread.

Unfortunately, artificial pneumothorax cannot always be instituted, even when it is definitely needed. In some of these cases, the chest surgeon is able, through such procedures as removal of the ribs, known as thoracoplasty, to collapse a part or all of the diseased lung effectively. This is a more drastic measure but has the same effect on the control of the disease as artificial pneumothorax.

By modern methods of examination many persons whose lung disease is small in extent are discovered. They have not been incapacitated in any way; their general health is excellent. For them, as well as many others in whom incapacity is only beginning, artificial pneumothorax has been found to suffice without hospitalization. This procedure is so extensively used that there are literally thousands of persons in the United States who are working full time with one lung collapsed and many with both lungs partially collapsed. They are enjoying good health, and the disease is not contagious. But in many cases, the disease is so advanced when it is first detected that the patient must be put at rest immediately.

Apparently in all species of animals, tuberculosis does not cause great destruction in the young, and it rarely becomes contagious until adulthood is reached. For example, although calves and young chickens become infected with tuberculosis, they usually do not fall ill or spread their disease until after they have attained their growth. However, if large numbers of tubercle bacilli enter the blood stream or the meninges [covering membranes] of the brain, fatal meningitis or generalized tuberculosis results. Among infants who become infected with tubercle bacilli during the first two years of life, these fatal forms of tuberculosis may develop in as many as 8 per cent. The remainder, for the most part, pass through the period of childhood without external manifestations of the disease.

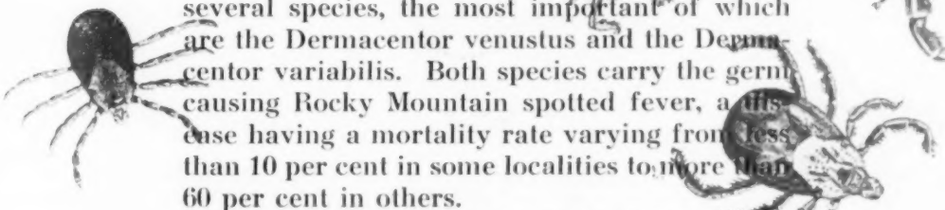
Illness from chronic tuberculosis of the lungs, which is its contagious stage, is a rarity during the age period of 2 to *(Continued on page 653)*

BATTLING WOOD TICKS

By S. R. WINTERS

ONE of man's mortal enemies among infection-carrying parasites is the commonly known wood tick. This small organism carries the germ causing the dreaded Rocky Mountain spotted fever. This tick has not yet been conquered; in fact, it is a long way from defeat. Thus far the combatants have only reached the skirmish line. Scientific men, however, are meeting man's enemies one by one; and, as a rule, science is victorious.

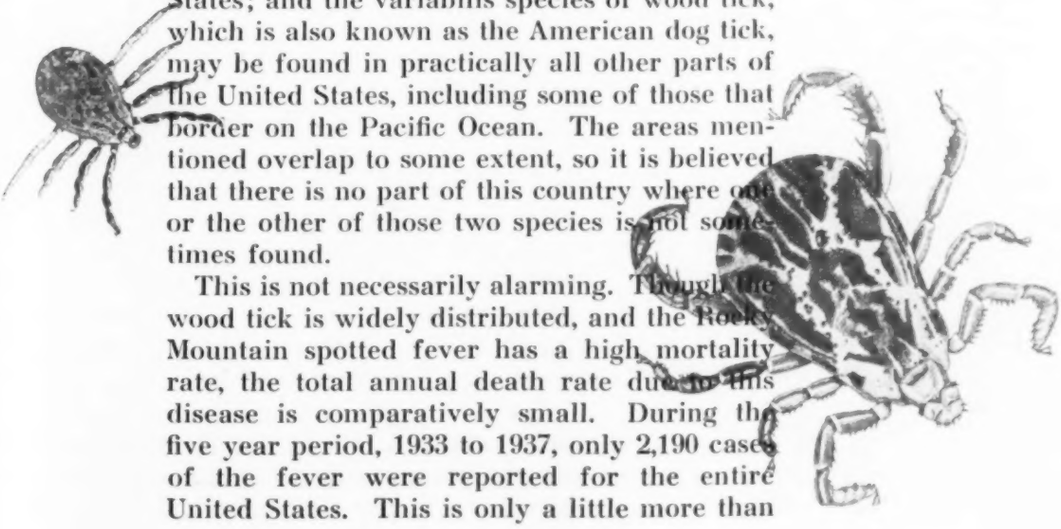
The scientific name of the wood tick family is Dermacentor; and this genus is divided into several species, the most important of which are the Dermacentor venustus and the Dermacentor variabilis. Both species carry the germ causing Rocky Mountain spotted fever, a disease having a mortality rate varying from less than 10 per cent in some localities to more than 60 per cent in others.

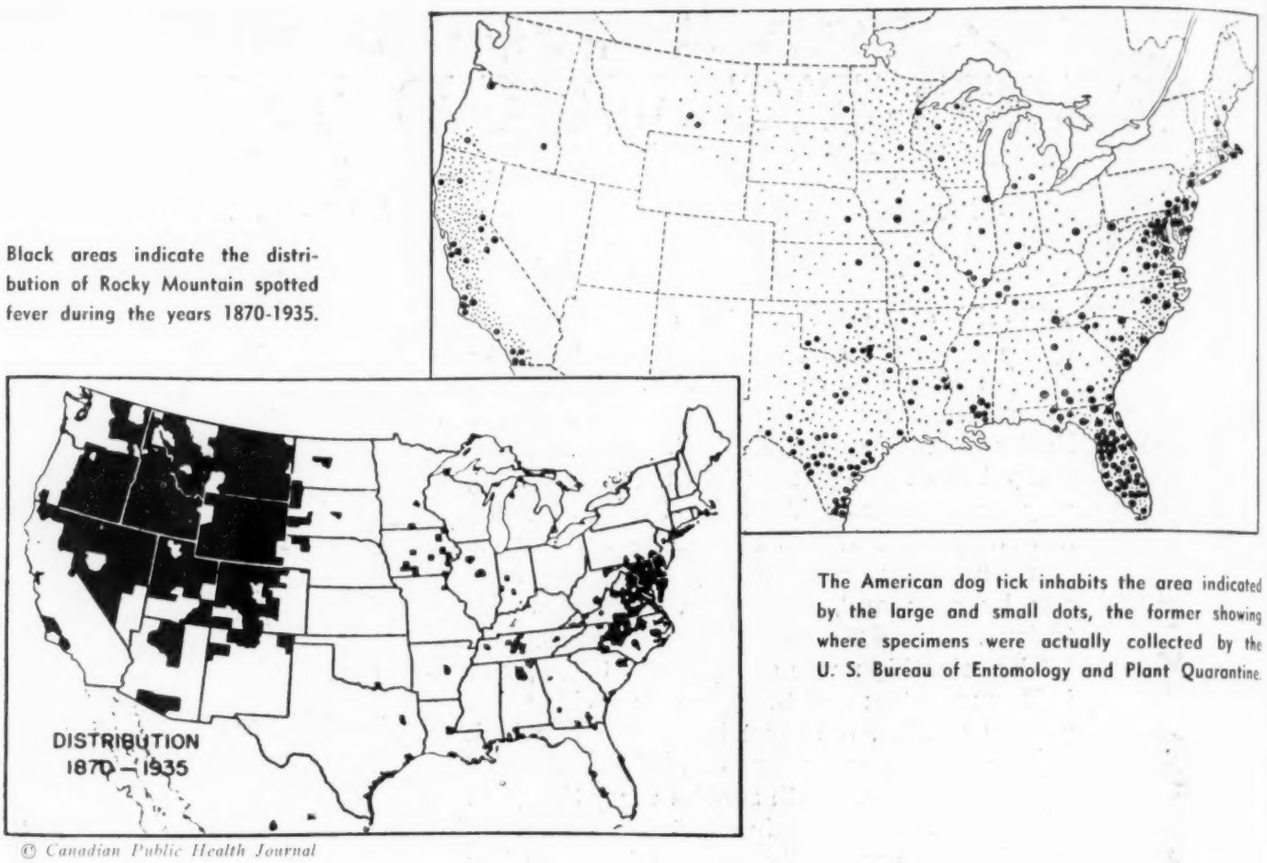


Careful investigations in field and laboratory have shown that infected ticks pass the disease from one generation to the next, providing a continuous reservoir of infection. The first part of the name "Rocky Mountain spotted fever" comes from the locality where the disease was first observed, and the second part from the mottled appearance of the skin of the patient suffering from this disease.

The venustus species of wood tick may be found almost anywhere in the mountain districts of the northwestern part of the United States; and the variabilis species of wood tick, which is also known as the American dog tick, may be found in practically all other parts of the United States, including some of those that border on the Pacific Ocean. The areas mentioned overlap to some extent, so it is believed that there is no part of this country where one or the other of those two species is not sometimes found.

This is not necessarily alarming. Though the wood tick is widely distributed, and the Rocky Mountain spotted fever has a high mortality rate, the total annual death rate due to this disease is comparatively small. During the five year period, 1933 to 1937, only 2,190 cases of the fever were reported for the entire United States. This is only a little more than





Black areas indicate the distribution of Rocky Mountain spotted fever during the years 1870-1935.

The American dog tick inhabits the area indicated by the large and small dots, the former showing where specimens were actually collected by the U. S. Bureau of Entomology and Plant Quarantine.

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The states within the broken line are known to harbor the wood tick.

400 a year for the whole country. The number of deaths due to the fever was less than 80 a year for this five year period. Eighty deaths among 122 million population is almost negligible. Despite this ratio, any disease that has such a wide distribution and mortality rate is worthy of careful study.

Only a small percentage of our people are bitten by the wood tick, and only a small percentage of the pests are infected. Yet, any one who visits summer resorts or travels much in country districts during the summer months may be bitten by a wood tick, and as every tick is a potential carrier of the infection, every one should know as much as possible about how to avoid infection. This subject is of special interest to farmers and to other groups who spend all, or a large part, of their time in rural areas.

Because of increasing public interest in the subject, as indicated by the multitude of questions received by the U. S. Public Health Service, this government bureau has issued a pamphlet entitled "Spotted Fever," which is sent free to all requesting it. Written in popular style, it answers the more important questions asked by correspondents.

From that pamphlet and other government publications, it is easy to learn some of the simple precautions to avoid infection. The investigators say that only about one tick in

300, even in infected areas, is capable of infecting man and that no one can tell by simple observation whether or not a certain tick carries the virus. They advise that campers, fishermen, picnickers and children playing on uncleared land should be examined at least once a day for these pests. All ticks should be removed at once and destroyed; then "the site of the tick bite" should be painted with an antiseptic such as iodine. The fingers or forceps used in removing the ticks should be "dipped in alcohol, or at least washed thoroughly with soap and water."

Some persons seem to have the idea that they can run away from infection by moving to districts where there are no wood ticks. The specialists say that the pests are so widespread that there is little use in trying to avoid spotted fever by moving to a region where wood ticks are less numerous.

After you have been bitten by a tick, there is a lapse of four to twelve days before you begin to show signs of spotted fever—providing that tick carried the disease. Then the symptoms show up suddenly: There is often a chill, a rapid rise in temperature and severe headache. As soon as these occur, call a doctor at once.

The Public Health Service has discovered and developed a vaccine that has proved to be of value in helping to prevent spotted fever. This preventive also reduces the number of deaths among those who contract the disease after vaccination. It is not sure to prevent the disease and probably has no value in curing spotted fever when administered after the disease has made its appearance. To be effective, the vaccine should be given in the spring before the tick season begins or just before going on a summer vacation in an infested area. Vaccination does not make a person immune for life to the disease, so it must be repeated each year preceding vacation time. Vaccine is furnished free of charge to physicians. The family doctor should be consulted by those desiring to be vaccinated as a precautionary measure.

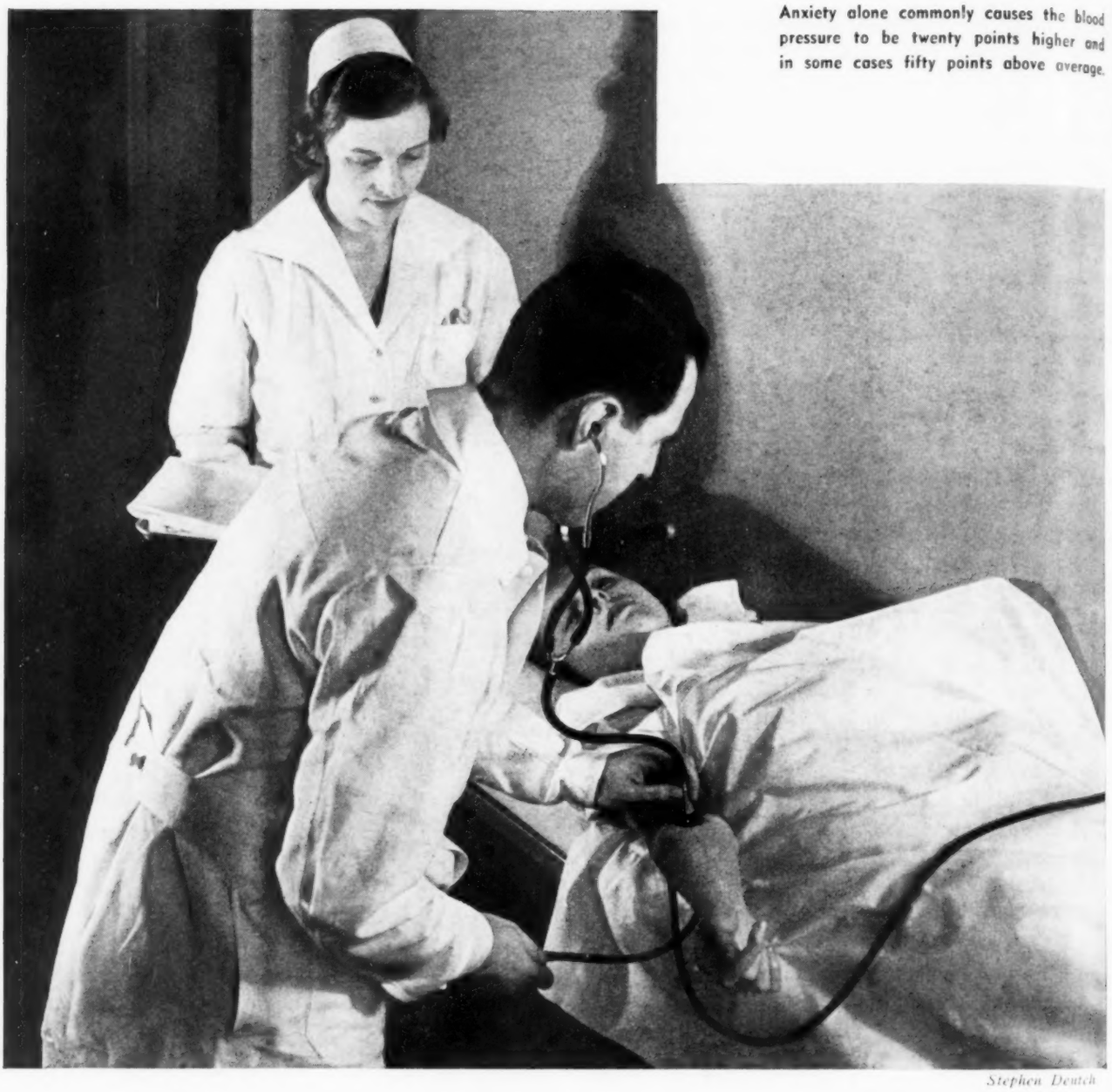
The species of wood tick known generally as the American dog tick is widely distributed; and as the dog is the principal host on which the adult ticks feed, every effort should be made to keep dogs free from this parasite. It must be remembered that each female tick that has become engorged by blood is capable of producing from 3,000 to 6,000 young ticks. To keep the dog free from such parasites, it should be kept as far away as possible from infested areas. It should be examined frequently for ticks. If on examination, only a few specimens are found, these should be picked off with tweezers. If many ticks are found, a better way is to dip the dog in a mixture of 2 ounces of derris powder and 1 ounce of neutral soap, in 1 gallon of water. The derris powder should contain at least 3 per cent rotenone, which is the insecticidal constituent of the powder. This mixture may be applied by a brush, but a more thorough application is made by immersing the dog in a tub containing the dip. For a time it may be necessary to apply the dip every other day. Those who have had experience say that they prefer to use a brush, as it is difficult to dip a large dog in a tub containing the mixture.

As ticks in their immature stages (seed ticks and nymphs) live a part of the time as parasites on such rodents as rats and mice, areas near dwellings and districts devoted to parks should be kept as free as possible from these rodents. This may be done by trapping and poisoning and by keeping the grass cut short on such areas. Ticks may be controlled in part over larger areas by pasturing fine-wooled sheep on grass lands.

Ticks carry the disease to human beings through biting. It is well, therefore, to avoid infested dogs and to dress in such a way that ticks cannot easily attach themselves to clothing while walking through grasses in tick-infested areas. Men are advised to wear high-top shoes that come up over the trouser leg, in order to prevent the parasites from crawling beneath the clothing. The wearing of leggings or puttees discourages the pest. Women should take similar precautions in manner of dress to prevent ticks from getting on their clothing. Such clothing may be uncomfortably warm on a hot day in July, but it is better to be too hot for a little while than to be dead after a little while. One should not sleep in clothing worn during the day in a tick-infested area, as they sometimes hide in folds of the clothes and crawl onto the body of the sleeper at night.

After returning from a walk through an infested area, it is well to examine the clothing and remove any ticks that have attached themselves. If a tick has attached itself to the body, remove it at once. Even if it has bitten, the chances of infection are not great, unless it has continued to feed from four to eight hours on the blood of its victim.

Only a small percentage of city dwellers has ever seen a wood tick, and most would not know one if they did meet it. There are many other ticks somewhat resembling this species. The different *(Continued on page 669)*



Anxiety alone commonly causes the blood pressure to be twenty points higher and in some cases fifty points above average.

Stephen Deutch

HIGH BLOOD PRESSURE

By ROBERT STERLING PALMER

WHEN YOU open your newspaper tonight, what will you turn to first? Sports page, the progress of the war, the editorials, or will it be shopping news or perhaps the comic strips? All these are interesting or entertaining to some, but there are a great many obituary fans. I mean persons who seem to take a positive pleasure in wrinkling their brows over the notices of recent deaths. "Hum," they say to themselves, reading the obituary of an absolute stranger, "Here is some one who died suddenly. I wonder if he had a shock. Do you suppose he had headaches like mine? Of course my old Aunt Susie had high blood pressure, and I may go the way she did. I think I had better see Dr. Jones tomorrow."

Well, usually they do not see Dr. Jones, but they continue to take a daily interest in strangers who have died and wonder whether

the nervous headache brought on by the children's noise or the natural thumping of the heart after climbing three flights of stairs or the shortness of breath from eating too much are due to their blood pressure. By this time they say to themselves "It must be high." In the end they are afraid to go to Dr. Jones because of what they fear he will tell them.

Now I am sure you have all recognized this case; possibly in some respects it may be your own. It is not high blood pressure; it is high blood pressure anxiety. Indeed, when we recall how common abnormally high blood pressure is in middle life and later, how frequently it is associated with serious damage in the head, the heart or the kidneys and how nearly half of us have had some older relative who has died as a result of high blood pressure, at least some high blood pressure anxiety may be reasonable.

A normal concern about your health should take you to the family doctor once a year for a general check-up. The headaches may be nervous in origin. The shortness of breath and pounding of the heart may be caused by overweight. That stabbing pain in the left side of the chest may be due to poor posture, too much coffee or too many cigarets—not to your heart. How you live may be more important than any disorder of your organs. Are you sleeping enough? Are your pleasures too exciting? Have you stopped taking any exercise? The answers to these questions are much more important than an anxious and agitated, "Oh doctor, what is my blood pressure?"

Let us say that instead of just wondering whether or not your blood pressure is high,

BLUES

you go to the family doctor for an examination like a reasonable person. When you get to his office, you may be interested to see that there are more women waiting to see him than men. It seems that for some reason or other more women consult doctors and more women than men have high blood pressure. You may have to wait a while before seeing the doctor, and you may get into conversation with some of the other patients. I hope you will be sensible enough not to go over your own or other patients' symptoms, since the doctor's waiting room, no less than tea parties and the porch during the summer, is a great breeding-ground for blood pressure anxiety. In all these things it is better to wait until you see the doctor and get the diagnosis and the authoritative knowledge of your condition first hand.

When you are called, the first thing the doctor does is to take a history of your complaints. If you actually have some high blood pressure, you may have headache, dizziness, general aches and pains, all of which occur in about 40 per cent of persons with high blood pressure. Shortness of breath and passing urine at night are present in about one fourth of the patients with high blood pressure. You must remember, however, that all these complaints are frequent in other common conditions, for instance, overweight, chronic rheumatism, the "change of life" and plain, ordinary nervous fatigue.

After the history comes the physical examination. A good examination is a thorough one which goes from top to toe. The doctor may pay special attention to your eyes where, by the use of a small instrument, he can see the character of the minute blood vessels similar to those within the head. He will determine the size of the heart by feeling the chest or tapping it with his fingers. After this he will certainly examine the urine to determine the presence or absence of any kidney irritation. He may or may not want an x-ray picture taken to determine the size and shape of your heart, and he may want an electrocardiogram or tracing of the heart.

Of course he has taken your blood pressure. If you have blood pressure anxiety, when he wraps the cuff about your arm and when he inflates it, you may feel tense and anxious inside and even timorously look at the instrument to see whether you can tell how high your blood pressure is. On the other hand, if you really don't care what he finds, you will hardly notice when he takes it, and you may be sure that your blood pressure is much more likely to be normal. Anxiety alone commonly causes the blood pressure to be twenty points higher and in some cases fifty or more points higher.

When the doctor is finished, he may say that you have a slight nervous rise in your blood pressure and that he would like to check it again in a few days. When it is checked, it is more than likely that the blood pressure will be normal. This sort of temporary or "first visit"

high blood pressure sometimes causes people to be refused life insurance, when it is really not significant. The only trouble comes when the person gets excited about it and then suffers from high blood pressure anxiety, rather than high blood pressure itself.

There are many types of high blood pressure, which the doctor may explain to you. Aside from the nervous or "first visit" high blood pressure, there is a mild variable sort which is sometimes up and sometimes perfectly normal. It is fairly common in young people, and I have seen many of them who have a variable blood pressure at 18 or 20, who gradually outgrow it during their late twenties or early thirties. Then, there are many persons, particularly women, who have a moderately high blood pressure, often associated with the "change of life," which they may have without any particular trouble for as long as twenty or twenty-five years, or even longer. The outlook for women with high blood pressure at this time of life is extremely good. Of course, there is a late stage of high blood pressure, which is the one I suspect you may have heard too much about.

It comes after many years and often has previously existed unknown and without symptoms. It leads to serious trouble: a shock in approximately 20 per cent of people affected by it, heart trouble in 60 per cent and severe kidney trouble in 10 per cent. Nevertheless, even with this late long-continued blood pressure, at least 10 per cent live useful lives and ultimately die of something else. The doctor will also have in mind the high blood pressure which in some persons follows pyelitis or infections of the kidneys, either in childhood or during pregnancy, or which may be in association with kidney stones or related to prostate trouble in older men. He considers the possibility of whether a small bit of glandular tissue has lodged in the adrenal gland on top of the kidney, which condition causes sudden attacks of extremely high blood pressure—a rare form but one completely cured by operation. Another rare situation is high blood pressure in the arms with a lower, even normal blood pressure in the legs; this is due to a narrowing of the arterial pathway near the heart and is not necessarily a serious finding.

Doubtless many of you have heard of blood pressure in association with pregnancy. But this blood pressure is well controlled by doctors nowadays. When a woman becomes pregnant, she should go to her doctor as soon as she recognizes her condition, see him regularly and have the blood pressure and urine examined. Careful treatment through pregnancy will prevent this form of blood pressure, which commonly causes a great deal of trouble and often leads to the advanced stages of blood pressure in later life. There is a form of severe, rapidly advancing blood pressure, which occurs in young people and is extremely serious. This is called malignant high blood pressure. Fortunately, it is a rare disease and may be regarded as more or less of an accident. It is really the much less severe forms of blood pressure which are common.

When the doctor has examined you and has done all the laboratory work he needs, he will tell you whether or not you have high blood pressure and, if you have, what sort it is. If you are overweight, he will put you on a diet to lose weight. He will advise you about your work and about your rest and whether or not you should take less salt in your diet. He will certainly want you to learn how to relax and to avoid the habit of undue anxiety about yourself.

Aside from good hygiene, diet and rest, there are other methods of treatment which are often quite effective. But these are applicable only in individual cases, and whether they may be used in a certain instance must be decided by the physician.

Preventive medicine has enabled more children to be born healthy and has almost eliminated deaths from serious infectious diseases, such as diphtheria and typhoid, and greatly reduced the deaths from pneumonia, with the result that more persons are growing up and living longer—long enough to be subject to the disorders which are associated with middle and later life. Perhaps we will agree that the opportunity of living is worth the various chances we take, including high blood pressure when we are older.

Of course persons with upward variations in the blood pressure are refused life insurance. It is only fair to remember that persons with low blood pressures have longer life expectancies. Of course the insurance companies know this, and they prefer the best possible long-time risks.

However, a long life is not necessarily a good one, or a shorter life a bad one. As the poet says, "The length of things is vanity; only their height is joy." The end of a good day is retirement to bed, as the normal end of life is the natural sleep and dissolution. The best life, as the best day, has been spent in the free expenditure of energy and the free play of nonpersonal interests—not in afflicting ourselves with the anxieties of the night.

AUTOPSY—*man's final gift*

***This operation after death is an important aid to medicine, and by allowing it to be performed, that person has carried out his final act of altruism on earth. An explanation of what "postmortems" really are is given by* HELEN MORGAN**

"WHAT was the actual cause of her death?"

"Was there something we neglected that might have saved him?"

"Must others suffer, as he did?"

Widow, bereaved husband, children and friends—all have asked these questions, if not aloud, in secret thought. Only a postmortem examination, which suggests to some persons something sinister and repugnant, will settle their uncertainties. Actually, a postmortem examination, as it is currently performed, is nothing more nor less than an operation after death, done by medical scientists who freely score every death as a "clinical failure" and who, fired by the zeal to insure coming generations against all illness, are not content to bury their mistakes. It is an operation which yields the incontrovertible reason why death occurs. It represents the consummation of a surgeon's artistry and a scientist's dream.

Every one is familiar with the scene of an operating room—antiseptic, barren, yet charged with drama. Here, then, is an operating room. Only here there is no life to be risked; life has already departed. Here is no fee to be met, perhaps at great sacrifice by the family; hospitals, alive to the autopsy's vital significance, bear all the cost of the pathologist, laboratory fees and equipment, which totals from $90 to $100 for each autopsy. Here is an atmosphere eminently selfless. The sole motive is curiosity, that special brand of constructive inquiry which has enabled scientists already to rescue mankind from many plagues and scourges.

The pathologist performs the operation in the presence of distinguished consultants and interns. A quiet intensity grips them all. All are aware that over another still form many years ago the disease of acute appendicitis was discovered. There was an autopsy that has since saved the lives of millions. And sixty years ago the disease of coronary thrombosis was disclosed through postmortem examinations, so that now middle aged individuals may live from five to ten years longer. Much that is known about internal cancer was revealed through autopsies. What will the pathologist find? Carcinoma? Cirrhosis? Or a new medical phenomenon that henceforth will prove curable because of this examination?

The operation is performed with the strictest reverence for the dead. If it is a complete autopsy, the entire body is examined; if it is partial, an incision no larger than that for an appendicitis operation may be made. Each organ is inspected; diseased tissues are removed and sent to the laboratory for an intensive microscopic and chemical analysis. No mark is made that will be visible. The record of the patient's illness, his diagnosis and treatment are discussed by the doctors. The interns listen eagerly. Here is no conjecture; this is indisputable knowledge. The opening is sutured closed, as it is after any operation. At the weekly hospital staff conferences, the microscopic findings are compared against any previous x-ray diagnosis. A confidential record of the case is filed in the hospital, and a duplicate of the autopsy findings is given to the family. Thus, protagonists declare, the body has performed its final act of altruism on earth.

Is this desecration of the dead? Deep rooted in human beings is the feeling that the dead must not be disgraced nor treated with disrespect. The Talmud canonizes this view; yet, according to orthodox Jewish scholars, the spirit of the Talmud makes it clear that an examination of the body which may save the lives of other people must be commended. So prevalent has this in- *(Continued on page 671)*

By GRACE IGO HALL

Open Doors to

IT WAS no tour of investigation that gave me my first glimpse inside of a children's clinic. It was the physical welfare of my own 9 month old boy. I was a stranger in my town, and I needed help immediately. Troubled, I sought the advice of a friend.

"Why don't you take him to a children's clinic?" she asked. "Nearly every city in the country has them. Right here we have three."

That first visit developed for me a friendly feeling toward this pediatric clinic, which has been duplicated in dozens of other visits to such clinics down through the years. There are similar clinics all over the country in which able doctors thoroughly trained to diagnose and treat children's ailments with the best of modern medical skill and experienced in years of daily practice are available to care for the local children.

In one typical clinic I visited, I found that waiting with Billy for one of the physicians could be fun in this small examining room so gaily decorated. Parading smartly around the room was a picture story of "Topply Tilts and His Wooden Stilts." The walls were covered with catchy rhymes to amuse the children who waited there. Even Billy, though not understanding the words, showed his delight in the clever fresco by laughing and gurgling and holding out his small arms to the figures which were in it.

Every available nook and corner in a children's clinic is used to the best advantage. Beyond the restful, attractive waiting room were eight examining rooms, a treatment room, an x-ray unit and a clinical laboratory, together with a dentists' suite and four private offices for the attending physicians. Each examining room—like the one Billy and I first saw—was decorated with a make-believe picture story all its own; marching around the top of the walls and telling a gay tale were "The Wizard of Oz" and a circus parade and a barnyard adventure. A pediatric clinic lacks nothing, for the basement of the average clinic, where the heating plant and storage rooms are located, is also equipped for allergy work, basal metabolism tests, isolation rooms for cases possibly contagious and darkrooms for photographic work.

The idea of children's clinics is not entirely new. Probably the first in America was established in connection with the Cincinnati General Hospital in 1901. After Cincinnati opened its clinic, however, others soon followed. Today there are hundreds of these fine clinics located in different towns and cities throughout the United States.

In all these clinics, the staffs are comprised of doctors specializing in various fields of medicine and surgery as applied to children. For example, one doctor will be engaged who specializes in allergy, one in general pediatrics, one in dental work, and another will handle the surgical cases.

On my second visit to the clinic, Billy seemed to be perfectly well and contented, but the doctor had advised me to bring him back for another examination.

The first thing the doctor said, as he entered the room and turned to Billy sitting on the table, was, "Well, young man, you're looking lots better this morning. Let's have a look at those new teeth today." Then turning to me, he asked, "Have you ever had Billy given a thorough physical examination, Mrs. Hall?"

"No, I haven't," I replied.

"Well, Mrs. Hall, that's one of the first things we'll have to attend to. We like to have the babies that come here brought to us for a check-up every month until they're 6 months old," he explained. "Then every two months is often enough for the rest of the first year; but we advise periodic examinations all through infancy."

In the first three months, an x-ray examination of the child's chest is made, which shows whether the baby's thymus gland, located underneath the breast bone, is enlarged. If it is found to be enlarged, several x-ray treatments can be given to reduce it. During the first year a tuberculin skin test is made. A complete blood count is also taken. The blood count of white corpuscles may show whether the child has any specific disease; while the test for red blood cells and the

Child Health

hemoglobin, taken after pricking the finger for a drop of blood, shows whether any anemia is present. An examination is made of the baby's urine to see whether the child's kidneys are functioning properly.

"Of course, Mrs. Hall," the doctor said, "if these special examinations haven't been given before the baby is 6 months old, they can be started just as well at any time during the first year. Umm!" he said, turning to Billy, "I see your mother hasn't had you vaccinated against smallpox yet. That's something else that should be attended to."

In a children's clinic the doctors vaccinate all babies against smallpox and immunize them against diphtheria before the end of the first year. In diphtheria the immunization is always followed by the Schick test to check on the immunity produced. Immunization against whooping cough, the disease which causes such a high death rate among children under 2 years old, is given as soon as the vaccination

Throughout the first year, the baby should be examined at regular intervals and receive immunization for important diseases.

U. S. Public Health Service

Stephen Deutch

There are similar clinics all over the country in which the best of modern medical care will be found.

against smallpox and immunization against diphtheria have definitely proved to be effective. The doctors in a pediatric clinic prefer that children be young for these vaccinations and inoculations, because these diseases are most dangerous to the younger children. Tiny youngsters are usually easier to immunize, and the reaction of the serum is less severe on them. Any child, however, regardless of his age, is immediately vaccinated if he hasn't previously received such immunization.

I learned that two of the commonest ailments found during the first year of a baby's life are eczema and anemia. Infantile eczema has several different origins. Frequently, it is caused by diets too rich in fats, sugar or

starches. "There was one young mother," said the doctor, "who reasoned if one teaspoonful of cod liver oil was good for her child, then a tablespoonful should be twice as good. As a result, the rich oil gave the child a bad case of eczema." Another cause might be allergy. Often such articles as furry toys, pillows, comforters, woolen clothing and strong soaps are found to cause skin eruptions. The basic factors must be segregated, so numerous tests are given to determine just what is to blame.

When anemia is discovered in a tiny child, it can usually be treated with iron or liver preparations or both, depending on the type of anemia present.

One of the noticeable things about children's clinics is the way they gain the confidence of their young patients. I have found this to be true in every clinic I have ever visited. This was drawn to my attention for the first time one day by a freckle faced, adorable little tike, who ran over to the woman sitting across from me.

"Mother!" he said in a loud voice, "isn't it my turn next? I want to see the doctor!"

"No, dear, not quite yet." Then turning to me she explained, "You see, Bobby's crazy about dogs, and the doctor who has some fine ones talks to Bobby about them."

Small wonder that children like to be taken to these doctors who not only watch the youngsters' health but make friends with them by discussing with each one the subject closest to his heart.

Too, they not only treat children as if they were grown-ups, which all the children like, but none of the doctors or nurses ever lie to them. When something is going to hurt them, the doctors tell them so. There is an excellent reason for this. It doesn't take long for a child to realize that if a person lies to him once, that person is likely to do so again.

Often the children who come to these clinics are not the only ones who need the attention of the doctors and nurses. Many mothers need it too. The nurse in a children's clinic told me, "There are things we have to explain to mothers. For example, one mother thought her 5 week old baby wasn't well because he didn't have a thorough daily intestinal elimination. Consequently, she was giving him a cathartic every day, which she thought kept his digestive system working properly. Her trouble was that she didn't know, like so many other mothers, that a normal breast-fed baby may go for three or four days without a bowel movement, until he is 4 or 5 months old. Luckily she brought the baby to us before she had done the baby any particular harm.

"Many mothers have to be advised that all-cotton undergarments are best for a baby. In cold weather, enough outer garments should be put on a youngster to keep him as warm as if he were in a normally heated room; but on the inside he should wear the same amount that he generally does. Then, too, mothers constantly complain that the baby refuses to take his cod liver oil.

U. S. Public Health Service

Often the mothers need some attention from the nurses, too. Right, the dentist also plays an important role.

"We point out to her that if she would feed it to him like she would any other food and not let him know that she thinks it is disagreeable, she wouldn't have any trouble."

During the second period, which starts when a baby passes his first birthday, another complete physical examination is given. It is no longer necessary to bring the child to a children's clinic every month; every three months is often enough. Sometime during the second year, further tests are made of his blood and urine.

One day the nurse checked Billy's weight against his height. "I know he's too thin," I told her. "He should weigh more, shouldn't he?"

"Don't you worry," she quickly reassured me. "Your boy is naturally slender. There's no reason to be troubled if a child is just a few pounds under the average weight for his height. If Billy really had anything wrong with him, our doctors would discover it."

It was during his second year that Billy had his first dental examination in the dental chair built especially for children. He sat up very big, his eyes as round as saucers, looking in babyish awe at the large window ledge covered with many interesting toy dolls. A big Mickey Mouse, with head cocked on one side, especially took his eye.

"A child should have all his teeth at the age of 2½," the dentist told me. "If he hasn't got them, it may indicate a deficiency of his thyroid gland, and if so, we give him thyroid extract."

I also learned from him the importance of keeping a baby's teeth clean. If they are not cleaned regularly and thoroughly, they may decay, or abscesses may form at the roots.

On one of my many visits to the clinic, when Billy was 2 years old, I saw a little girl apparently about the same age, who sniffled constantly with a bad cold. The mother said to me, as I sympathized with her baby, "Yes, isn't it a shame? I've been treating it for weeks, and since I wasn't able to cure her, I decided a pediatric clinic was the best place to bring her."

Later I learned that the doctor, after a thorough examination, had discovered her ailment to be far more serious than just a cold. The tuberculin skin test and x-ray examination had revealed that she had an advanced case of tuberculosis. The history of her case also showed that ever since she was a tiny infant she had been living in the same house with an aunt who had an open tuberculous infection. This child was ordered to be removed immediately to an entirely different environment, where she could gain back her health.

In the third period, or preschool age, which includes children between the ages of 2 to 6, thorough physical examinations are given twice a year. Only one x-ray picture of the chest, one blood count and urinalysis and one tuberculin skin test are made, however, during each year of this period.

Pediatricians are also much concerned about posture during the preschool age, when a child's habits are being formed. Photographs are taken to reveal faulty postures, and exercises are prescribed to correct them.

The fourth period, called the school age, starts with 6 and ends with 16. During each year of this period one thorough physical examination, with full laboratory tests and x-ray examinations, one blood count, one tuberculin skin test and one urinalysis are given each year.

It is still harrowing for me to remember the terrible, never-to-be-forgotten illness my small son went through when he was just 6 and starting on his fourth health period. He came home from school one afternoon with feet wet and cold from wading through snow during the noon hour. Incredible, but true, by morning he had a temperature of 105 F., and a sore throat. Gravely, the kind clinic doctor shook his head over my fretful, tossing, sick boy. By night Billy was worse; the germs from a throat infection had lodged in the glands of his neck.

Endless hours slipped into days, days into a week as his tiny life hung on a slender thread. Day and night the doctor worked tirelessly.

And then, one evening the doctor turned from the bed; there was a new light in his eyes as he announced, "Billy's going to be all right." Weeks later when my little boy had practically recovered, the doctor told me, "Mrs. Hall, do you know your boy might have died if you hadn't built up his resistance by following a sane health program for him?"

In all children's clinics the ailments of adolescent boys and girls are constantly brought to light. There was that lovely, popular young girl of 15, Ella-Lou, who was trying to reduce her weight by dieting without a doctor's advice. "I'm simply like a tub," she said, "at least 30 pounds too fat." Months later when Ella-Lou was brought to a pediatric clinic, the doctors found that a constant lack of proper foods, along with too many school and outside activities, had caused fatigue over such a long period of time that her body resistance had been tragically lowered; she had contracted tuberculosis. Years of medical supervision will be required to restore this young lady to health.

If only mothers everywhere, whether they live near a children's *(Continued on page 640)*

"AUTOGRAPH"

Prize-Winning Print by Alois J. Welzenbach

REFINEMENT

THE ADVENT of the machine age has been blamed for "technical unemployment" and a number of other afflictions of the late depression years. But one hitherto neglected aspect of the changes in our mode of living after the introduction of machines is now demanding serious attention. It is the trend away from the use of fresh or "whole" foods and the substitution of preserved and refined foods. This process has been a natural phase of the growth of urban communities and the geographic separation of consumer groups from the producing areas. Food must be stored for considerable periods of time and transported long distances. Keeping qualities and compact packaging to facilitate storage, transportation and handling have become considerations of major importance. They have exerted continual pressure toward the improvement in methods of preservation, such as canning, drying, cold storage and, more recently, freezing. The unavoidable losses of vitamins and minerals, as well as certain intangibles which change the flavor and texture of superheated and cold storage foods have been deemed relatively unimportant. Quick-frozen foods retain their vitamin content rather well.

Qualitatively and quantitatively the refinement of cereal products has been carried so far that from the nutritional standpoint they can scarcely be regarded as equivalent to similar foods in use up to the middle of the last century. This statement has particular reference to wheat, significantly called the "staff of life" from time immemorial. Wheat is known to have been grown by the Swiss lake dwellers, by the ancient Egyptians and throughout the Roman Empire. There is evidence that it was cultivated even in prehistoric times. From early times its use was widely distributed throughout Europe and Asia. In the Western world it was not known until the sixteenth century, when it was accidently brought into Mexico by a slave of Cortes with some rice. From the time of its introduction in this manner, it rapidly took its place beside maize, the native cereal of the Americas.

# of FOOD and its effect on our diet

By ELIZABETH M. KOCH

The most primitive method of grinding wheat was to place the whole berry in a bowl-like hollow in a large stone and pound it with a smaller stone. Gradually, improvements were introduced, such as applying water power to turn two large flat stones, between which the grain was crushed. To remove coarse bran particles, the meal was sifted through woolen cloth. But the resulting flour still comprised essentially the whole berry. The grinding of the grain and the distribution of the flour was done locally. For the most part, farmers took their grain to neighborhood mills and carried the flour home with them.

About 1840, the development of the roller mill in Hungary and the introduction of silk cloth for sifting the flour initiated revolutionary changes in the milling of wheat. With successive improvements, it finally became possible to remove completely the embryo or germ and the outer covering layers of the wheat berry. The starchy endosperm only was pulverized into flour. At present, patent white flour represents a recovery of 72 per cent or less of the whole grain.

This highly refined flour has certain overwhelming advantages. In the first place, removal of the germ from flour improves its keeping qualities. The germ is the plant embryo, and in it is concentrated not only the vitamins, minerals and protein of the berry but also a high content of oil. The oil exposed to air after the wheat is ground undergoes changes which impart a strong rancid flavor and odor to the flour. In the second place, by proper blending of flours from different wheats, a product is obtained which has uniform baking qualities, and which home and commercial bakers can rely on to give consistently the same results in the texture of bread and cakes. This is of real importance, since it eliminates the unpredictable and discouraging failures frequently experienced with unstandardized flours. And finally, there is a decided consumer preference for bread and other products made from a fine white flour. Esthetic considerations support the practical and economic arguments for the marketing of a low extraction flour. With the concentration of population miles apart from the concentration of wheat growing and milling, it appears imperative that a uniform and stable flour which can be stored for months and transported long distances be developed.

But what effect has this sophistication of cereal products, and wheat in particular, had on the national dietary? Since the discovery of vitamins, it has been known that with the removal of the bran and embryo from the flour, most or all of its vitamins, in addition to much of the nutritionally important mineral elements, such as iron, calcium and phosphorus and considerable protein, have also departed. But students of nutrition have been reconciled to this condition, because rapid transportation and cold storage have made available at all seasons of the year an abundance of fresh fruits and vegetables, which could be substituted. It has been assumed that these foods were rich sources of the water-soluble vitamins as well as the fat-soluble vitamin A. Emphasis has therefore been placed on the routine inclusion in the diet of the so-called "protective foods," milk, eggs, meat, fruits and vegetables, especially of the leafy variety. Authorities in the field of nutrition have unanimously agreed that if ordinary servings of these foods were consumed each day, all dietary requirements would be satisfied with a fair margin of safety. Cereals came to be regarded as starchy or energy foods.

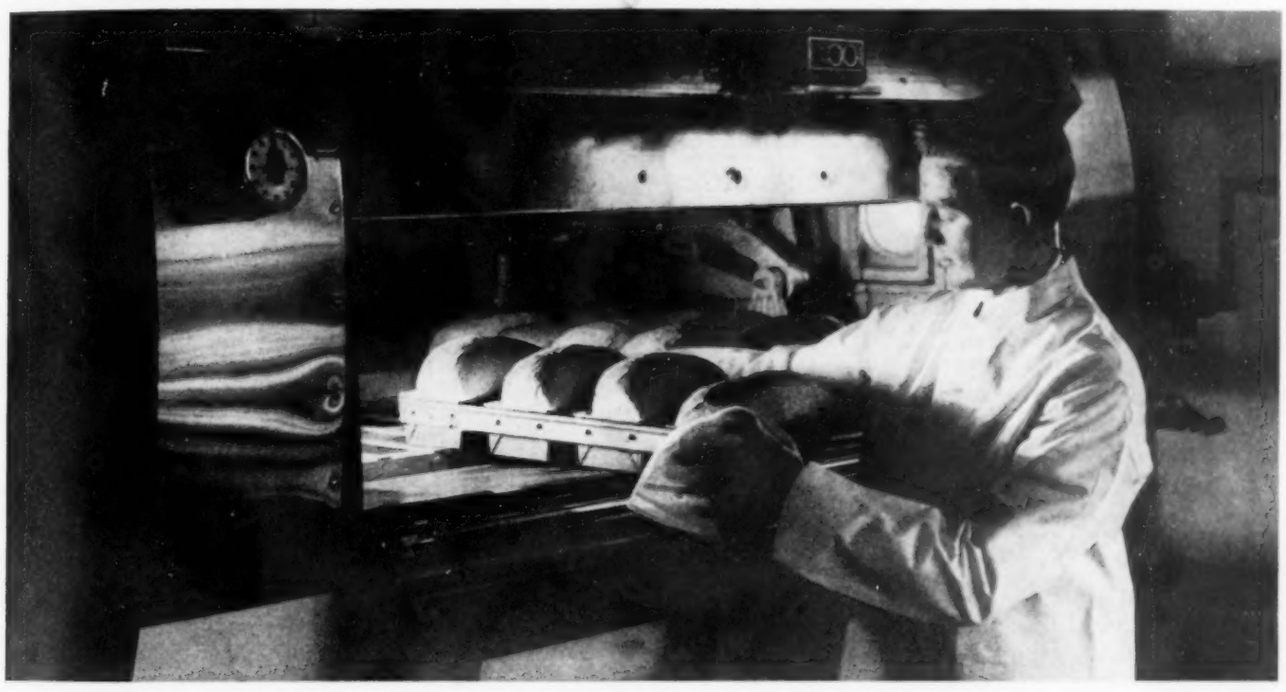
The general acceptance of this teaching was voiced by Alonzo E. Taylor, director of the Food Research Institute at Stanford University. He wrote in 1929,

> The proteins, vitamins, and minerals in the cereals . . . have been in part replaced by the proteins, vitamins, and minerals in fruits and vegetables. The net effect is not measurable but there can be little doubt that the level of competency in intake of proteins, vitamins, and minerals has been improved during the last fifty years.

But the enlightening revelations in vitamin research these past ten years have seriously

Huge bins, resembling gigantic ice cream cones, hold the clean tempered wheat before it is ground. This is one phase in the modern milling process, which ultimately turns out a uniform and stable flour that can be stored for months and transported to points far distant from milling centers.

disturbed the complacency over the loss of vitamins resulting from the preservation and refinement of foods. This reversal of thought has come with the accumulation of information concerning the functions of vitamins and the physiologic requirements for them. Parallel with these lines of research has gone the investigation of the distribution and content of the vitamins in foods, making it possible to estimate the vitamin content of diets consumed by large groups of people. And finally, with better diagnostic methods resulting from these laboratory experiments has come the clinching evidence from physicians that deficiency diseases are more frequent in this country than has generally been supposed.



Trained specialists test various types of processed flours by baking, to determine their keeping qualities and nutritional values. Thus we learn how food refinement affects diet.

The early standards for vitamin requirements were nothing more than rough estimates. What is more, they took into account only one vitamin B, the antiberiberi vitamin, because, up to 1926, that was the only one recognized. At that time the original water-soluble B vitamin was separated into two fractions: one labile [prone to change] under heat, another stable under heat. The antiberiberi potency was destroyed by heat; the other dietary essential resistant to heat was found necessary for the growth of young animals. The antiberiberi vitamin was called B_1, the growth vitamin B_2 or sometimes vitamin G. Attempts were made to purify both B_1 and B_2. But it was promptly observed that vitamin B_2 concentrates exhibited multiple effects differing according to the method of purification and the test animal used for determining the potency of the preparation. This led to diligent work on the part of many investigators to separate additional components and determine their nature. At present, there are a dozen or more postulated vitamins of the original vitamin B complex. One prevents "black-tongue" in dogs; one prevents dermatitis in rats; another prevents dermatitis in chicks; one appears to prevent a type of anemia in pigs and in dogs; there is an antiparalysis factor for chicks, rats and for pigs; a new factor W was found to be necessary for growth of rats; a grass-juice factor for growth of guinea pigs and rats, another growth factor for chicks and pigeons, a stomach ulcer factor, a factor which prevents gray hair in black rats, several factors necessary for nursing and so on, apparently *ad infinitum*.

Five of the B vitamins have been separated in pure crystalline form. They are: (1) thiamin, the antiberiberi vitamin B_1; (2) riboflavin, the growth vitamin B_2; (3) nicotinic acid, the antipellagra vitamin which also cures black-tongue in dogs; (4) vitamin B_6, which prevents dermatitis in rats and one type of anemia in dogs and pigs; (5) pantothenic acid, which was first recognized as a growth factor for yeast and has recently been shown to prevent dermatitis and degen- *(Continued on page 646)*

By ALLEN S. JOHNSON

ADVICE for the

THE CAUSE of diabetes is still unknown. It shows a tendency to affect certain families more than others, but it cannot be said to be directly inherited. Nevertheless, a child with one diabetic parent is more likely to have the disorder than a child of normal parents. And this tendency is greatly increased if both parents are diabetic. Certain races, like the Jews, appear to have an unusually high incidence of diabetes, and there is a similar association between obesity and the development of the disorder. But although the cause of diabetes is unknown, medical science has learned a great deal about the mechanism of this metabolic derangement, which enables it to restore the patient to health even though it does not cure the disorder.

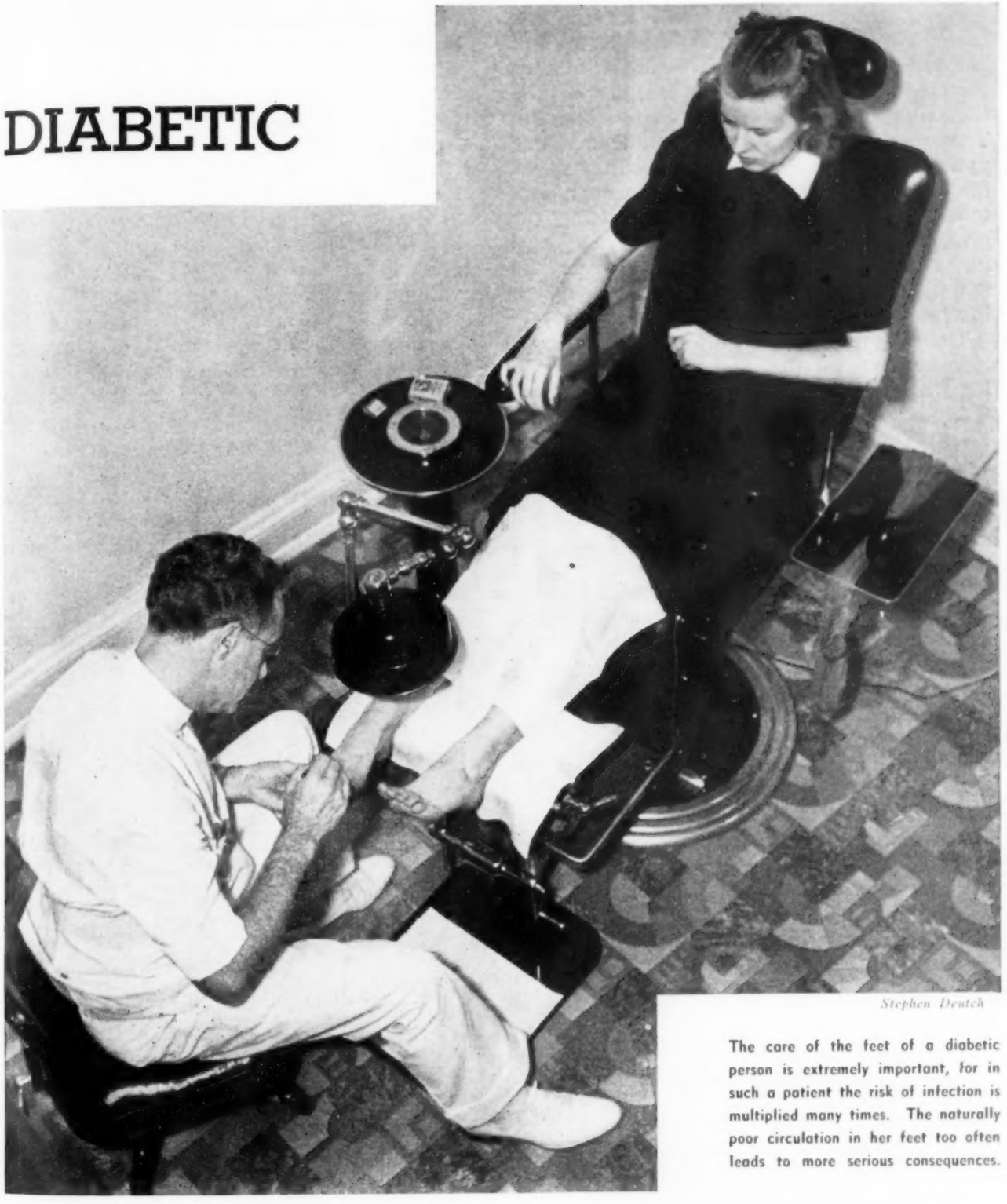
Behind the stomach is a gland called the pancreas, or sweetbreads, which secretes, in addition to digestive juices, a substance called insulin. This enables the normal person to burn part of the sugar derived from his diet and to store the remainder. In the diabetic person this nice balance between sugar absorbed and insulin secreted is lost. It seems reasonable to incriminate the pancreas in part, for by experimentation, an animal can be made diabetic by removing his pancreas; but the pancreas of diabetic patients does not always show definite signs of disease. And recent work indicates that the anterior pituitary gland at the base of the brain may play a part in the disease. But the doctor who is caring for diabetic patients is still primarily interested in the pancreas, for that is where the disease becomes manifest.

Because of some fault in the behavior of the diabetic's pancreas, the sugar absorbed from digested foodstuffs, especially starches, cannot be properly burned or stored in the tissues of the body, and it accumulates in the patient's blood. But the blood was apparently intended as a vehicle of transport and not as a storehouse for this sugar, so the kidneys come to the rescue and begin to filter off the excess sugar from the blood into the urine. Of course this requires a great deal of fluid to keep the sugar in solution, and the diabetic therefore becomes aware of frequent and profuse urination. Because of this loss of fluid, he likewise grows thirsty; and because the sugar is being lost to the body, the patient grows weak and loses weight. So also he may develop unusual susceptibility to infections, such as boils. These symptoms, however, may be absent in mild or early diabetes, so that the disorder is often first suspected because a routine physical examination has revealed sugar in the urine. Hence, the importance of such routine examinations is demonstrated, especially in patients with a family history of diabetes. For early diabetes is usually mild, and mild diabetes is easier to control. Conversely, neglected diabetes is likely to become severe diabetes.

Sugar in the urine does not prove the existence of diabetes, but this may be assumed until disproved by blood sugar tests. These may be carried out in the fasting state before breakfast or else after a meal. Or the patient may be given 50 to 100 Gm. of glucose in lemonade and a series of blood sugar tests done at intervals thereafter. We know that the blood sugar is lowest in the fasting state and should not exceed 0.14 per cent. After a meal, the normal blood sugar rises, reaching its peak in one half to one hour and returning to the fasting level in two to three hours. In the diabetic, the blood sugar at its peak exceeds the upper limit of normal (0.17 per cent) and takes longer to subside to the fasting level. As a result of this high blood sugar a significant amount of it will have been filtered off into the urine, where it may be detected by the simple tests which every diabetic person learns to make. The diagnosis of diabetes, then, is based on a high blood sugar and sugar in the urine. But it is well recognized that the nature of the patient's diet prior to the tests may influence them, and this must always be taken into account in arriving at a diagnosis.

The diabetic may well say, "All right, I can't burn or store sugar; let's give up all carbohydrates." We do decrease his intake of sugars and starches in the hope that his pancreas will then be able to secrete enough insulin to take care of this reduced load. But if we omitted all carbohydrate from his diet—and that would mean omitting all protein, since 58 per cent of it is converted into carbohydrate—it would be an interesting but terrible chain

DIABETIC



Stephen Deutch

The care of the feet of a diabetic person is extremely important, for in such a patient the risk of infection is multiplied many times. The naturally poor circulation in her feet too often leads to more serious consequences.

of events. The diabetic would be forced to subsist largely on the fats from his food and from his own body tissues, and it would soon be found that he was unable to burn these fats completely unless a certain amount of sugar was likewise being consumed. These products of incomplete fat combustion are known as ketone or acetone bodies, and they, like sugar, appear in the urine of the uncontrolled diabetic. Perhaps because of their chemical similarity to ether, they produce drowsiness and eventually coma in the diabetic. That is why we do not omit all carbohydrate from the diet. In the days before commercial insulin, severe diabetics were unable to burn enough sugar to take care of the fat of even a starvation diet; acidosis developed, and coma and death followed.

Today the diabetic is given a more liberal allowance of carbohydrate, partly to insure the

proper burning of fat and partly because it is more palatable than large amounts of fat, but particularly because it seems desirable to keep the fat intake of the diabetic even lower than that which is agreeable to a normal person. The calories necessary to maintain the diabetic patient at the desired weight are derived largely from carbohydrate, with enough protein for tissue repair and, in the young, for growth. If this carbohydrate allowance exceeds his tolerance, his own deficient pancreatic secretion is supplemented with injections of insulin.

The fat intake is kept lower than a decade ago because of the diabetic's tendency to hardening of the arteries. This complication today is a more serious threat to the diabetic than is coma. So long as he sticks to his diet and takes such insulin as he may need, coma is not a problem. Even an infection like pneumonia or appendicitis, which lessens his ability to take care of carbohydrate, should not precipitate coma, as it used to before the insulin era, for the dose of insulin can be correspondingly increased. But the diabetics, even young ones, tend to develop arteriosclerosis prematurely. And now that diabetic patients are living out their expected span of life, thanks to insulin, the arterial hardening of old age is added to that peculiar to diabetes. Considerable evidence has accumulated to indicate that this hardening process may be retarded in the diabetic, if the level of fats in the blood stream is kept low. This can be accomplished by reducing the amount of fat in the diet. Hence, the low fat, high carbohydrate diets in vogue at present.

But even when these dietary adjustments are rigidly carried out, the feet of the diabetic are a source of concern to the physician. The trimming of a callus with a razor is to be condemned in a normal person. In a diabetic person the risk of infection is multiplied many times. The poor circulation of the diabetic's foot, coupled with his proverbially low resistance to infection, leads all too often to gangrene instead of merely to a transient infection. A gangrenous toe or foot is a dead member and must be amputated. But the surgeon finds that the blood supply to this arteriosclerotic limb is so poor that the amputation stump will not heal. Instead of losing a toe, which the diabetic might well spare, the leg has to be amputated above the knee in order to secure a level at which an adequate blood supply will insure healing. What a tragedy that a pared corn or a pricked blister has led to the loss of a leg!

How then may such a tragedy be avoided? Scrupulous personal cleanliness is of the greatest importance. The diabetic must wash his feet daily with warm water and soap. They are carefully dried without harsh rubbing between the toes. The nails must be cut straight across and not curved, lest ingrown toenails be invited. Fungus infections of the "athlete's foot" variety must be prescribed for by the doctor and not by the druggist or radio announcer. Shoes must be soft and roomy without being loose. Socks must be of a weight to furnish warmth and protection without causing excessive perspiration. The latter can often be controlled by dusting the feet with boric acid powder. New shoes must be worn only around the house an hour at a time until well broken in, so that no blisters will form. Should a blister appear, it must be dressed by the doctor and should never be pricked or opened by the patient. Dry or horny callus or cuticle may be softened by the application of lanolin at bedtime. The diabetic must avoid constricting elastics about his legs and should learn not to cross his knees lest a feeble circulation be further impaired. Electric pads and hot water bottles must be used with the greatest caution, especially during sleep, as feet with a poor blood supply are easily burned.

Needless to say, the new-found diabetic should have a complete physical examination and any infection must be appropriately dealt with at once, as infections and diabetes conspire to make each other worse. The incidence of tuberculosis is much higher among diabetics than among nondiabetics, and a routine x-ray examination of the lungs is highly desirable.

The diet must be arranged according to the energy requirements of the patient. In general, it is desirable for the adult to weigh less than the average. Weight reduction is vitally important for the obese patient and may make it possible to dispense with insulin. Comparatively few doctors require their patients to weigh their diets, as in bygone days, but scrupulous attention must be paid to the household units of measurement in which most diets are calculated. Otherwise, it is impossible to determine whether the persistence of sugar in the urine is due to too large an allowance of food or to the failure to adhere to the diet as prescribed. Herein lies the importance of each diabetic's learning to test his own urine. This is not difficult, and children as well as adults learn to take pride in normal "blue" tests. These are best carried out on the urine passed one to two hours after *(Continued on page 662)*

"SHOCK" TREATMENT for MENTAL DISORDERS

By CHARLES F. READ

IN RECENT years, many cases of supposedly incurable mental disorders have been subjected to a relatively new form of treatment. A certain degree of success has been encountered with the use of this technic, which utilized mainly two preparations: metrazol, a stimulating drug, and insulin, the pancreatic extract which has saved and prolonged many a diabetic's life.

Treatment with metrazol and insulin can best be described by referring to the work at a large Illinois state hospital, where in February 1937, insulin shock therapy was started. To date, 342 schizophrenic patients have been discharged from treatment. Of this number 143 have been sent home as recovered or greatly improved. Of all patients treated, 154 had been sick longer than a year and a half, the maximum time for the duration of psychosis in which good results with this treatment may be expected. In cases of less than six months' duration, 75 per cent of the patients have been returned to their homes as recovered or greatly improved. After one and a half years' duration of the disorder, the number of recoveries and improvements is 11 per cent.

The treatment requires about three months, with about forty shocks during this period and by "shock" is understood a condition maintained over a period of two hours, during which the patient's blood is not only extremely low in sugar, but he is comatose, due to the injection of insulin. Shock is interrupted by feeding through a nasal tube some glucose [sugar] in tea; whereupon the patient recovers consciousness within from 5 to 15 minutes and is soon ready for a heavy meal. This is preceded by toast and jam to promote recovery from the state in which the blood sugar is extremely low.

The exact cause for the improvement and recovery of patients treated in this manner and by metrazol, is not yet known. All over the world, biochemists are working on this problem. One thing seems certain: that during this period the brain consumes less oxygen than normal, because brain tissue, nourished entirely by starches and sugars, lacks during insulin treatment these carbohydrates which are essential for the normal activity of brain tissue.

Possibly the subsequent tide of increased activity of brain tissue serves in some manner to obliterate the bad "habit patterns" which produce psychotic, or irregular, behavior.

Patients discharged are checked on at regular intervals. There have been eighteen relapses to date during the three years of this therapy, and these patients have usually been placed under treatment again. The treatment is expensive because of its long duration and the intensive medical *(Continued on page 668)*

SICKNESS INSURANCE

By IRENE A. CHOLES

MAYBE they'll succeed, and maybe they won't. But if they do, it will mean some definite answers to many sickness insurance questions. The "they" in the case are members of the State Medical Society in Wisconsin.

The American Medical Association, of which this society is a constituent, while alleged to be against any sort of group distribution of medical service to premium paying patients, has not discouraged Wisconsin organized medicine from doing experimentation in this field. In fact, the Association has not tried to discourage any regularly organized medical group from such experimentation.

The Wisconsin State Society is going about this the hard way; it gathered background data from abroad, from this nation, from the state, from the county, from the city, from the village, from the citizen. And every source used was a qualified one. For instance, citizens interviewed were brought in contact with important facts relating to the subject either through their professional or community positions.

Also, all other instances, experiments and plans in which pertinent material could be found were used as sources for data. Even Europe was ransacked for information, the State Medical Society sending its secretary abroad to study the compulsory insurance systems there.

Real experimentation is being made; every question, every rule, everything has a purpose. When these experiments are over, many questions that now puzzle doctor and layman will be answered, it is hoped, one way or the other. Some of these important questions are:

1. Do subscribers in the experiments consult physicians earlier, in the face of symptoms, than they did prior to becoming subscribers?

2. Do the subscribers obtain a greater degree of preventive service under the plan than formerly?

3. Are subscribers more willing to follow the advice of the physician for needed care?

4. What factors are encountered that tend to lower the quality of sickness care? Can these be corrected?

5. Is the demand for voluntary insurance sufficient in amount to prevent an overload of adverse risks, thus requiring a premium which is too high for the income class sought to be served?

6. Can such plans operate economically from the point of view of administrative and solicitation costs?

7. Is the return for the physician, having in mind the income class served, sufficient to encourage graduate education, proper office equipment and sufficient to continue to attract the best minds to the medical profession?

8. Is the plan capable of enlargement on an area or statewide basis?

There are three voluntary sickness insurance plans now being offered to the public; two are in actual operation. All are different in some respects. Why? The more types tried, the more will be learned. Moreover, varying conditions require different methods.

The plan in Superior, Wis., is managed entirely by the cooperative lay organization that conceived it. Superior, a Finnish city, is *the* Wisconsin spot for cooperatives. The other two plans, one in Milwaukee and one in Rock County, are run by the county medical societies which planned them.

All three come under the general supervision of the State Medical Society. Another reason for the difference allowed in the experiments is that the society believes each locality has different needs and perhaps would be better served by individual systems.

Wisconsin is limiting its plans, really only experimenting. If the Wisconsin plans do not work, then less is lost than if they had been statewide. And this limiting also makes pos-

sible more numerous experiments, in turn making the chances for success greater.

One of the notable things that came up was the willing cooperation of the county medical societies. As all these plans must have the consent of these bodies, it can be seen that the doctors of the state could have killed these attempts at sickness insurance if they had wanted to.

Moreover, most of these doctors were also willing to serve on the panel lists of the plans. In Milwaukee County, 450 to 500 doctors—60 per cent of all physicians in that area—are going to serve in the Milwaukee experiment. In Rock County 75 to 80 per cent of the physicians volunteered.

A fact that makes this willingness to serve in these plans even more important was that in all these trials the ultimate insurer is the physician. Though normal scheduled fees will be paid if possible, if not enough money is coming in, the doctors get only a percentage of what they are supposed to receive.

It was much harder to get the minimum number of insurance buyers than to get the doctor's cooperation. The society insisted that the Rock County plan have at least 200 subscribers before it could start, so that the experiment would have a fairly sound basis from the beginning.

This is only one detail in the exhaustive work done by the society to make the word insurance in voluntary "sickness insurance" really mean something.

Other specific examples can be given. For instance, the subscribers in Superior must pass a physical examination. No accident insurance company would accept applicants of which every one would surely have an accident. In the same way, the Superior experimenters in voluntary sickness insurance don't want persons already sick to join either.

The subscribers in the Milwaukee experiment are geographically chosen, with a certain number of residents from suburban Greendale; obviously, of those who join not all can be sick.

Rock County's plan takes subscribers on even another basis. Fifty per cent of any homogenous group may join; however, the minimum number which may join is ten. As in the Milwaukee case, the insurance principle here is the obvious fact that out of 50 per cent of a certain group not all can be in poor health.

Different insurance principles also are used in the type of premiums to be paid under the plans. Of course, all the present premium rates are experimental.

The Superior subscribers pay straight premiums, as follows: single person, $1.50 a month; a man and wife, $2.25, and a family of any size, $2.90 a month.

The Milwaukee subscribers, however, have a deductible coverage in addition to premiums. The subscribers pay the first $24 of any sickness needs during one year. After that, all services are given by the physicians and surgeons without any charge other than the usual monthly premium. Premium rates for Milwaukee subscribers are therefore much lower, more specifically as follows: single person, 50 cents a month; a man and wife, 75 cents, and a family of any size, $1 a month.

Rock County subscribers pay straight premium rates like those of the Superior plan; the only difference is in one price, that of the rate for a couple, which in Rock County is $2.

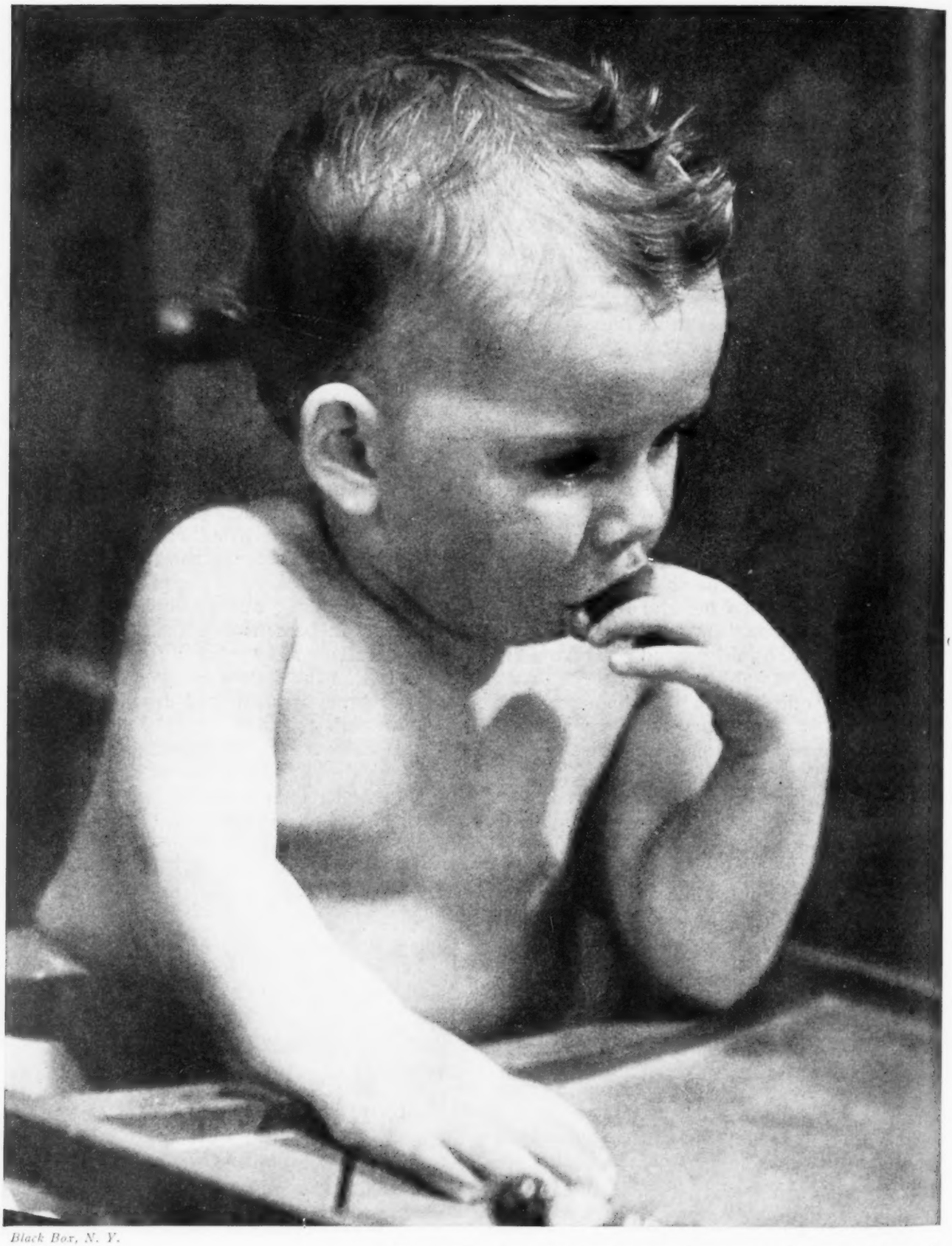
Like regular insurance companies, the plans all offer specific benefits, that is, all services rendered by physicians and surgeons are offered in unlimited amount; but in the sickness insurance contracts (comparable to insurance policies) are listed certain exceptions, such as services for persons afflicted with tuberculosis, venereal diseases and insanity, services for drug and alcoholic addicts and services for persons covered by workmen's compensation. The reason for these exceptions is that the state already provides facilities for these services, and duplication would be wasteful.

Also excepted is the furnishing of serums, vaccines, drugs and like items. The plans offer service rather than commodities.

An important item offered in these plans is the free choice of the patient's physician, thus retaining the important personal and confidential factor between patient and doctor, even though both are members of a group belonging to a common medical distribution center.

Another important fact is that the doctor is paid in proportion to what he does. This means the doctors who work harder will be rewarded, thus keeping the incentive motive still open to the physician.

The State Medical Society, like a true scientific body, does not offer results or answers yet, though two of these have been in operation some months—the Superior experiment since July 1939, the Milwaukee plan since last November. The State Medical Society is not forming conclusions hastily, letting sufficient time be one of the factors in these experiments. They are thoroughly sifting all they gather, recording precious facts carefully. Later these facts will furnish help not only to medicine in Wisconsin but also to medicine all over the world.



Black Box, N. Y.

The discovery of any habit causing unusual pressure on the face and jaws calls for immediate action on the part of the parent and attending doctor. Pressure habits are vicious things and can do a lot of damage to the child's face and jaws.

Mother, Beware!

Whether your child's face will develop without deformities may depend on your alertness. Do you know what habits to watch for?
asks **EDMUND M. JOHNSTON**

HAVE you seen a scrawny, peaked little 9 year old boy suddenly dart down an alley to avoid a small group of kids who were ambling toward him? His right name is James Thomas Blair; but the kids call him "Fish Face," because his teeth are so crooked. Children are so brutally frank.

Buck teeth, Andy Gump chins and bull dog jaws are not natural and have a reason for being that way. They are deformities and a definite handicap. Every one should know, by now, that the present generation of boys and girls have enough handicaps to overcome without a physical one that can be prevented, greatly improved or corrected.

The question, "Why did Jimmy's teeth come in so crooked?" is a common one, and one which is difficult to understand, especially if his baby teeth were nice and straight, or perfect, as most mothers are frank to admit.

There are many reasons for crooked teeth, and something could be done about it by indulgent mothers, if they only knew the thing to do and when to do it. Of course there are some dental deformities that occur before birth which will require the combined knowledge and skill of the family doctor, plastic surgeon, dentist and orthodontist [corrective dentist]; but they are rare, and nothing but professional aid can do any good.

If the expectant mother will stick to her orange juice rations, along with other prescribed essentials of diet, and do exactly as her doctor tells her, she has an excellent chance of bringing into the world a baby with a normal bony skeleton, which includes the teeth and their supporting structures. It is the ignorant or irresponsible mother who denies her offspring the normal bone-building materials in her diet and brings a baby into the world with bones so soft and spongy that the prenatal pressures [before birth] have bent and malformed them, especially the limbs, head and face. This has produced a helpless cripple. Such a condition is unnecessary, and something must be done about it.

Once in a while, nature herself slips up and does something wrong. The terrible deformity of harelip and cleft palate is caused by a faulty union of several small bones in the front part of the hard palate. Great strides have been made lately in the correction of these conditions, and repair of the damage is not only more complete but esthetically more pleasing.

Dame Nature can be cruel as well as bounteous. In most cases she lays down a definite pattern, and by a series of evolutionary changes, a normal individual is produced, and the pattern is complete in every minute detail. But she brooks no interference from outside sources. By outside sources is meant a lack of cooperation in diet and exercise on the part of the expectant mother and external pressures exerted by obnoxious habits during the early part of the infant's life.

These are things about which something can be done. The discovery of any habit causing unusual pressure on the face and jaws calls for immediate action on the part of the parent and attending doctor. But since he cannot be with the newborn infant constantly, the mother must be able to recognize an abnormal habit and report to the physician. If the doctor is unable to correct the habit, he is entitled to call a dentist or orthodontist into consultation, and generally the quartet consisting of parent, doctor, dentist and orthodontist can find a solution for the problem; the habit must be broken.

Pressure habits are vicious things and can do a lot of damage to the child's face and jaws. When you stop to think of the soft, pliable bone at birth, especially the head, it is not difficult to see how the softer and more spongy bones of the face can be distorted and pushed out of position by an abnormal pressure habit. These habits are tricky things sometimes and difficult to detect. They can be divided into two classes for purpose of discussion.

It doesn't take much observation to know that a newborn baby is sucking its thumb or finger. It is so evident and frequent that many mothers make no attempt at correction. But that same cute little thumb or finger is exerting an abnormal pressure against the gums in the upper and fore part of the baby's mouth, which is transferred to and connected with the

soft bony structure of the hard palate. The most common cause for a failure on the parents' part to break this habit is the fact that a thumb or finger in the baby's mouth makes a good child. He seldom cries and is an all round good fellow, as babies go.

The infant who breathes through his mouth is in for a bad malformation, if the condition is neglected. The poor little tyke's nasal space is generally so filled with adenoids that the youngster figures it out this way: "Why work hard at breathing through my nose when it is so easy just to open my mouth and let the air almost flow in by itself." Call in your doctor, and he will tell you what to do.

Since the new arrival is a lazy fellow, he spends about eighteen hours of each day getting himself rested up for the battle of life. He sleeps most of his time. But the method of sleeping has a great deal to do with the shape and size of his jaws and the position in which his teeth will grow. Too many infants who sleep on their stomachs get into the habit of resting on the chin. This is a pressure habit, and many of our Andy Gump chins are a direct result of "belly sleeping." You have heard mothers gasp, "Never let your child sleep on his back; it will make the back of the head flat." If he sleeps as he should on his back, part of the time on the back of the head and the balance on either side of the head, he will not develop a flat head. If it is a question of the certainty of a flat face or the possibility of a flat head, which do you prefer?

The more obscure pressure habits are difficult to detect and harder to stop. Most of them continue unnoticed until some one tells you that your darling is "sticking his lower jaw out" or that "the youngster's upper jaw looks too big for its lower."

The tongue is the worst offender, in early life as well as in adult and old age.

Listen closely some time, and you will hear little Eva sucking away without a thumb or pacifier in her mouth. She is sucking her tongue against the roof of her mouth, the hard palate. Two things will happen to a constant tongue sucker: The upper jaw will be overdeveloped and the teeth carried outward with it; and the lower jaw will fail to keep pace, causing failure of the upper teeth to meet the crowns [tops] of the lowers properly.

Biting the tongue between the teeth will cause "open bites." The teeth, both uppers and lowers, in the area occupied by the tongue in this biting habit will be either depressed downward or fail to elongate to their natural position, causing an open space which is impossible to correct until the habit is broken, and it is difficult even then. This leads to an abnormal swallowing condition, because a vacuum must be formed in the process of swallowing. In order to swallow, the child must force the tongue into this opening between the upper and lower teeth to complete the suction by which swallowing is made possible. A new swallowing process must then be developed until the space can be closed. This position for tongue biting may be on either side as well as the front part of the mouth. Cheek biting will do the same thing. Sore and inflamed tonsils will sometimes cause a child to thrust his lower jaw forward; so have your doctor check for bad tonsils, if you notice Jimmy trying to imitate Ginger, the bull pup. A new and abnormal socket will be formed for the joint, and Jimmy will never be the same afterward.

Lip biting will push the upper teeth forward and the front lower teeth backward. This causes large spaces in the upper front teeth, and Jimmy may learn to spit through the spaces; but he will not be a handsome kid.

There are many more obscure causes for crooked teeth in the young child, but just remember that cooperation of the family doctor, dentist, orthodontist and pediatrician is an important phase of an infant's early life. With this cooperation Jimmy should grow to school age with a good looking, as well as efficient, set of grinders.

And when he enters school, another person is added to his group of guardians, the teacher. She has Jimmy under her supervision much of the day and should be able to detect the early youth and adolescent pressure habits. They are many and vicious. The resting positions are the worst offenders, and all children seem to get heavy-headed during school hours and need some sort of support.

Some of them rest the chin on the hard palm; some on one fist, others on both; while some cradle the entire lower jaw into the open palms. Any of these pressures can cause a bad condition in the mouth and must be eliminated. Have Jimmy do his head resting on the forehead. He cannot bend his skull very much at school age, but he can push his face and teeth out of normal alinement.

So, Mother, if you do not want to see Jimmy running around with a set of silver harnesses on his teeth, begin early with that cooperation with his "guardians" and the intelligent watchfulness of his habits.

Black Box, N. Y.

Helping the EXCEPTIONAL Child

AN EXCEPTIONAL child's difficulty is simply an exaggerated or heightened picture of the normal child's problems. Exceptional children, whether mentally retarded, maladjusted in behavior or handicapped by a specific disability, are usually taken first to the doctor to discover whether he has some magic which will make them into normal children. Through the years, the doctor has stood shoulder to shoulder with parents in their efforts to protect children from the effects of disease and injury. He has been a bulwark of strength and comfort in a great variety of family crises. In many cases he has brought about miraculous changes not only in health but in behavior as well.

Bobby M., at 2½ years, says only two or three words. His mother is thoroughly worried. Bobby is her first child, and she is afraid that, through her inexperience, she is not doing the right things to encourage him to talk. Her own mother, who has had six children has tried to comfort her. "Some children talk early and some late. He will be all right."

Bobby's other grandmother is not so reassuring. "Why, his father talked at 12 months! I

By CHARLOTTE EASBY GRAVE

John needed to improve his muscular coordination; a jungle gym, such as the one above, afforded him this opportunity.

Philip Gendreau

think you should take Bobby to a doctor and find out what to do about him."

There are many Mrs. M.'s in the world. Some worry because a child is nervous, some because he does not eat and others because he has temper tantrums.

In his wisdom the doctor is quick to see that beyond the improvement of the exceptional child's physical ills and handicaps, lies a further need for special educational treatment and training.

Twenty years ago this letter from a physician was the only introduction for one child to a special school:

> I am sending you a very distressing case. The girl is 8 years, 10 months of age. Her name is Mary Doe. She is pleasant and agreeable, has no temper tantrums, and has no bad habits or enuresis. She is the only child of a mother who has devoted her entire life to the child. The father graduated from college with honors but since being gassed in the War has been unable to do anything. There is no financial strain.
>
> The mother thinks more of this child than any one in the world, even her husband. She is eager to remain near her at the school. I tried to tell her as gently as I could that it would be bad for Mary. I know how patient you are with these family situations and feel certain that you will handle this exactly right.

From that letter this information was gained: the child's name, age and approximate mental age; a brief description of her temperament, a statement of the mother's attitude toward this only child, the father's position, the financial background, and the fact that the family situation as well as the training of the child would be the school's concern.

A request was sent to the physician asking for a more complete report, which was slow in arriving. This was probably due not only to the pressure of the physician's work but also to his idea that the schools had the child and that the report was useful only as a matter of record.

A letter to the school which Mary had attended brought in return a printed card with numerical grades for each year's work. The school teacher, no doubt, knew Mary well; but at that time, teachers' observations were in their heads and not part of a written record which could be passed on to a new school.

So the teachers and governesses had to wait until they had lived with Mary to find out what kind of a girl she was, how much she could do for herself, what her interests were. After many parental visits, the family story was told confidentially to a staff member. From it the school gained a broader understanding of Mary's difficulties.

Mary remained for only eighteen months. During that time she learned to feed herself, to dress herself and to take care of her toilet needs, all tasks which her mother's loving care had previously made impossible. She made some progress in reading, writing and counting. She learned to tell time to the quarter hour. Most important of all, she played cheerfully with other children and seldom whined or cried. She began to be a person instead of a helpless baby. But unfortunately for Mary and despite the advice of the physician and the school, her mother took her home to stay, saying, "I cannot live without my baby."

Contrast this case with the following: In 1939 this letter from a physician was received:

I have a child, John Smith, who is retarded and in need of special schooling next fall. I have had him under observation this winter and have found practical ways and means of teaching him. The parents will make arrangements to visit the school soon.

Closely following this came a detailed report which is summarized below:

Name: John Smith. *Birthdate:* Jan. 12, 1931.
Cause for reference to physician:
Clumsiness and apparent retardation.

Family history: Negative on both sides. Child is ambidextrous. No history of lefthandedness previous to John.

Developmental history: Mr. and Mrs. Smith were both 23 when John was born. They have two younger boys, aged 6 and 7. These children are apparently superior. They are well developed physically and are making advanced school progress. John's birth was difficult, labor was prolonged. There was evidence of blueness, and the child was apparently paralyzed. He was kept in a respirator twelve hours. For several days following birth, he did not retain his food. He was bottle fed and swallowed quantities of air at every feeding.

Throughout infancy and early childhood he was a feeding problem, and even now is a "finicky eater." He did not walk until twenty months, did not talk until three years. He has always been a light, restless sleeper. He has had two nurses since birth. The first was an Englishwoman who gave him perfect physical care but kept him under such close supervision that he was not stimulated to try new things. The second nurse is a young American woman, who has been with him for three years. She has managed him well, encouraged him to be more self-reliant and cooperated with the tutor during the past year.

Parents' Attitude: The parents are intelligent and anxious to do everything possible for John. They are devoted to him and, in spite of their efforts to avoid it, have evidently overprotected him. The atmosphere of the home is pleasant. The parents get along well with each other and with the children. The younger children are sometimes impatient with John but on the whole are good to him.

Personality and Interests: Essentially happy and affectionate, not easily irritated, never surly. Irresponsible but not distractable. Likes music and drawing. Hobbies are people and "nature." Has to be handled firmly. Gets excited and overstimulated if allowed to have too much freedom.

Appearance: A nice looking child with clear skin, blond hair and blue eyes. Nutrition is good. Walk essentially normal. Expression response is good. Speech is clear. Wears glasses because of farsightedness.

Reflexes: Knee jerk, Achilles, Clonus, Babinski, Abdominals, Biceps, Triceps, Periostor—all slightly hyperactive. Pupils of the eye are equal and regular, react to light and accommodation.

Special muscular tests: Muscles are well developed. Relaxation is fair. Some spasticity present. Involuntary motion absent. Overflow absent. Incoordination essentially absent. Breathing normal and entire speech mechanism all right. Tongue motions normal.

General Impression: Retardation with certain physical handicaps.

Exercise: (to be carried out by "muscle retraining" teacher under physician's supervision):

1. Relaxation.
2. Foot exercises in the up and down and lateral planes.
3. Walking exercises.
4. Toe and heel walking.
5. Balance on separate feet.

Educational Methods: After repeated trials of auditory, visual and tactile methods of learning, John proves to be a visual type with a visual handicap. The handicap is under control, and he should be able to read better. He is learning typing because of slight incoordination in the arms. Under careful tutoring he has learned to read first grade material, can read and write numbers to 20, and knows three or four addition combinations. Day by day notes of his last year's work with the tutor are being forwarded.

Diet: Normal, varied diet. Needs extra fruit because of tendency to constipation. Takes on weight rapidly. Should not have second helpings.

Medication: 3 teaspoons cod liver oil daily in winter.

Play: Cannot ride a tricycle, skate or climb a jungle gym. Runs recklessly and often stumbles. Should be encouraged to try all the play activities of children in his school group.

With this picture of John Smith in hand the school knew what it had to work with and for, from what kind of a setting the boy came, what had been done for him previously and what he needed next.

John was at once placed in a classroom group with four other *(Continued on page 670)*

Wonder Stories of the Human Machine

The parts of the body cannot be replaced when wear or tear overtakes them, so it behooves us to watch their performance with an eye to their upkeep, says* GEORGE A. SKINNER, *in the tenth and last instalment of this series of articles

ONE important item that is usually carefully investigated before the purchase of an automobile is made is the cost of its upkeep, for that determines largely the life of the car. The human machine will stand much more abuse and neglect than will any other and still give fair service for a long period. But the upkeep of the human machine likewise becomes an important item, since damaged parts are not replaceable, and the injured machine must either make the best possible use of the damaged part or lose it altogether. There is, however, one marvelous thing about the human machine that does not exist in any other known mechanical device. While severely damaged parts may at times be completely lost, this machine tries to repair them so they can go on doing their work in the assembly, sometimes not as well as formerly, but in such a manner that the machine can keep going at a fair pace. If every time a slight damage or wear occurred we had to lay the machine up for repairs or replacements, certainly more care would be used in maintaining its original perfection.

Many of the necessities are supplied in a routine way, as this machine has a way of making some of its needs known. The fuel supply is one that is rarely neglected. Many others are supplied because we are reminded through pain or discomfort if they are neglected. Unlike ordinary machines, this human machine cannot keep up an unvarying pace indefinitely, because fatigue, physical and mental, comes on quickly. Physical fatigue requires rest, and mental weariness is best met by a change of occupation. Hence we must plan for some variety of occupation, usually in the form of recreation, a real rebuilding of the nervous or electric system, a recharging of the battery.

All machines deteriorate much more rapidly when not in use. The use of this human machine is exercise, and as long as we remain alive, there will be some of it forced on us. But often we put up a strong resistance to exercise, avoiding it in every way possible, perhaps not intentionally, but just as effectively as though it were. Modern life has so many conveniences that it is quicker and easier to be moved than to move. The human machine must have activities to make it work properly. In youth this activity is insistent, and the youngster cannot keep still long, if he is normal. Throughout school and college life our young people are active enough. But as business and social life begin to demand more time, exercise as such is the easiest of all usual activities to sidetrack, and it is diminished or almost abandoned. This is unfortunate and the cause of much disability during the middle years of our lives. Men who should be at their best both mentally and physically allow themselves to deteriorate physically and become easy victims of disease at a time when they are most valuable to their families and the state. This is seen in one of its serious aspects in annual vacations, when strenuous activities are undertaken by men formerly athletic, but long out of training, and the results are too often disastrous. No strenuous vacation should be undertaken without adequate previous physical training, any more than we would expect a football squad or race horse to perform untrained.

The human machine is almost entirely automatic in making repairs. It does not wait until a part is badly worn, but the repairs are made as fast as wear occurs. During middle age, the wear and tear are about equal to the ability to repair, with this property gradually failing as life is extended to later years, when

wear gradually exceeds repairs. Good care has much to do with the long life of all machines.

If serious damage is done to the human machine, it may need help in making repairs; but the most any one can do is to assist it by placing it in the most favorable position to facilitate the action of its own repair department. This usually involves rest and quiet and sometimes the actual removal of a part.

It is curious how accustomed we become to certain disabling occurrences. In this classification is the common cold, and almost every one expects to have at least one cold a year. There is no other one cause that puts so many persons out of commission for some part of the year as this common cold. Until recently, we have assumed that nothing could be done about it and thereby usually have done the one thing that most prolongs the condition: the failure to give up work for rest. Quite recently it has begun to be recognized that this cause of general disability is not to be regarded too lightly and that real economy results in requiring people in industry and business to stay home until they are relatively normal again. We do not know the definite cause of colds, but we do know many of the conditions that make their development probable. Among these are fatigue, prolonged exposure to cold and to others having colds. Unquestionably some colds are spread by direct contact; but they are contracted usually when the machine is not at its best. The remedy that is most effective is the simplest possible one: complete rest for a day or two, preferably in bed, so that the body temperature may remain approximately constant. The mechanism should not be used or exercised until it can make its own repairs in the future.

We are frequently notified through the daily press of the sudden and unexpected death of a prominent citizen. These sudden deaths are more than usually tragic, often the cause of family and business disasters. We must, however, keep in mind that practically never do such cases occur in the human machine without preliminary notices. Often these warnings are not heeded. The automobile will rattle, squeak, knock, grind, squeal and bump. Machinery does not go to pieces without announcing that some part is not getting proper attention. In practically every case of sudden death from "heart disease" or "apoplexy" there have been a long set of warning symptoms, which have been wholly or partly ignored. Instead of the machine being laid up for checking over and repairs, it has kept going until the never appearing "convenient time" arrived. It is fortunate when the break is sudden enough and sufficiently complete to make it lay up before it is beyond repair.

Aside from accidents, the greatest danger to the human machine at present is "engine trouble," or heart disease. Any form is serious, though when properly cared for the machine may be kept running at fair speed and efficiency for many years. Too often neglect is at the foundation of the trouble. High blood pressure is so intimately connected with heart damage that it is difficult to consider them separately.

Common warnings of circulatory damage are shortness of breath, sudden dizziness, headaches, "indigestion" and faintness. Not any one of these slight irregularities alone would indicate much, but the frequent recurrence of one or several symptoms are usually distinct warnings that a man is overloading his engine or that the engine is out of repair and not carrying its usual load with ease. A careful history of many cases of sudden heart attack has brought out ample evidence of previous warnings. Perhaps the man is in early middle life and will not believe that anything could be wrong with him, but he may have forgotten or not known of an attack of "rheumatism" in childhood. He may have been feeling unusually well and ran for a street car, only to find himself badly winded when he arrived aboard and unable to continue his usual work that day. It is truly a rare case where some of the gages of the machine have not registered trouble. Again it is emphasized that the gages are usually accurate, but we fail to note them.

The causes that lead to some of the more serious engine troubles are apparently the same ones that cause a gradual narrowing in the size of the blood vessels, which is present when we have high blood pressure. We do not definitely know the cause of this narrowing. But poisons generated in the body through faulty chemistry and those introduced into it have much to do with causing this condition. The body requires a certain amount of blood to keep it running, and if the pipe lines are reduced in size by various deposits, the engine will have to work faster or with much more power to force the blood to all parts of this vast network. So long as the engine can maintain this pressure, the machine will run with more or less normal results, but with increased chances of breakdown on account of overload.

Nearly every one shows some increase in blood pressure as age advances, and this must be regarded as a normal part of the process of growing old. The psychic effects of high blood

pressure are often much more serious than the actual conditions. Certainly in ordinary cases, a relatively high pressure may exist for years with little inconvenience; and if the possessor is judicious in his physical life, he may live to normal or even extreme age. Many things must be considered when high blood pressure is found. Certainly there should be no alarm, and experience indicates that even reasonable care will largely compensate for the loss of elasticity indicated by abnormal pressure.

Among changes that may indicate damage to the circulation (and this frequently includes kidney damage) is a partial loss of vision. The changes that have brought on the narrowed condition of the arteries of the general circulation have also affected those of the kidneys and the nerves of sight. Often the first effects are due to body poisons and may be transient. In this case prompt treatment will sometimes relieve or arrest the condition.

If the kidneys are involved to any considerable extent, there may be visible changes in the body (in addition to those mentioned in the eyes) indicated by swellings under the eyes and around the ankles.

There are a number of changes that may take place insidiously in the human machine and reduce performance; these may go on a long time unrecognized. They may not show distinctly in any one way, but after a time the owner begins to be conscious that something is "out of kilter" with his machine and that some repairs may be necessary. The changes may become apparent through lack of a quick "get away" or pep, the inability to maintain speed (fatigue) and sometimes also an actual loss of weight and changes in the appearance of the body finish (complexion). Blood changes take place which are usually designated under the general title of "anemia," sometimes spoken of as blood "turning to water." Such changes result from failure of the blood-making devices and sometimes from abnormal chemistry of the body. Often this can be promptly corrected by supplying some missing element. If this cannot be done, the changes may be retarded or stopped until the slow repairs are made by the body. Such disturbances can often be referred back to various glands of the body known under the name of endocrine or ductless glands. There is still much to learn concerning these portions of the human machine; but much is known, and encouraging advances have been made in repairs in this department.

Obscure causes of trouble in the human machine may be due to infestation with various parasitic forms, and among the most common are intestinal worms. These may be tapeworms or roundworms, both of which are relatively large. There are also a number of small worms which reach our food canal in various ways. Often they are more of an inconvenience than a source of damage. Some forms, such as the hookworms may cause much destruction and wear, especially to the blood-making department. All are unwelcome "guests" and if suspected may usually be found out and eliminated promptly.

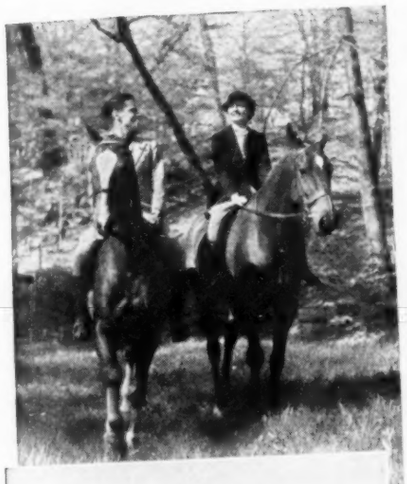
Insects may also convey a number of diseases; for instance, malaria is spread by mosquitoes. Malaria is the direct and indirect cause of more partial and total breakdowns of the human machine than any other one cause, and frequently results in total wreakage and scrapping of the entire machine. Fleas, lice, bedbugs, ticks and a number of other parasites may cause damage and must be kept in mind when machine performance is poor.

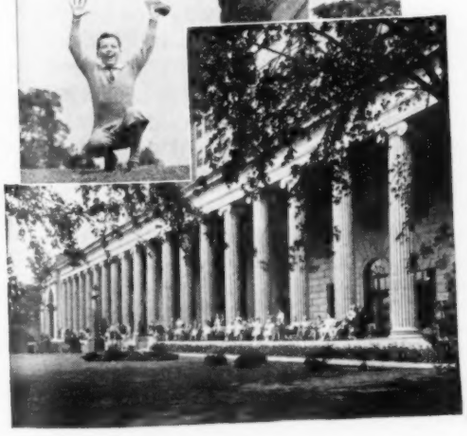
One other deteriorating factor is important, especially to the aging machine. This factor we call cancer. It is a broad term and includes many forms of changes, but almost without exception they can be promptly halted if we recognize that they exist. Usually they make themselves known, but their warnings are neglected. Hence any unusual change in the operation of the older machine, especially if repeated a number of times, should be at once checked up by an expert to discover the cause of the trouble.

From what we have noted in our consideration of the human machine, it must be apparent that ordinary care and observation in its operation and upkeep much resemble that which a careful owner will give to his automobile. But too often the care given it is not even up to that bestowed on a fine car, for it is subconsciously realized that the human machine will keep on operating, even when damaged by wear or neglect, long after the automobile would completely fail. Many damages may be prevented by a regular checking over, and this method will often discover beginning wear and tear which can be promptly checked by proper handling.

The human machine is a wonderful machine, capable of great endurance, self repairing, highly responsive to our needs and will sometimes last for many years with practically no care. But every attention bestowed on it brings almost immediate response in endurance, comfort and reliability of performance. Its care and upkeep are the best investments we can make.

FOR A TRULY *Rest—Full* VACATION





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How innocent is a "Stomach-Ache"?

A "STOMACH-ACHE" means *something's* wrong.

True, it may be nothing dangerous. But because it *can* be very serious, no one should treat such a warning signal lightly.

▶ All too frequently a severe so-called "stomach-ache" means an acute attack of appendicitis—one of the more important causes of death among children, adolescents, and young adults. Yearly it takes some 15,000 lives in this country.

▶ Many of these lives are lost as a result of "self-treatment." Many could be saved if the following three-point safety rule were observed whenever intense abdominal pain persists for more than an hour or two:

1. **Call a doctor.**
2. **Apply an ice bag and remain quiet.**
3. **Do *not* take a laxative, food, or medicine.**

The importance of prompt medical attention is clearly indicated in a recent survey of appendicitis cases made by medical authorities. It reveals that the death toll, among those who delayed going to the hospital from two to three days, was from *three to four times greater* than among patients admitted to a hospital within the first 24 hours. The survey further shows that fatalities, among those who had taken a laxative after pain developed, were more than *three times greater* than among those who had taken none.

▶ Even if a persistent "stomach-ache" is not appendicitis, it cannot safely be considered innocent. It may mean one of a number of other serious diseases.

▶ When in any doubt whatsoever about abdominal pain, call your physician for *safe* guidance—and call him in *time*. Then if serious disease is indicated, an early diagnosis and treatment may speed recovery, reduce the cost of illness, and decrease the possibility of dangerous complications.

Send for Metropolitan's helpful, free booklet, "Appendicitis." Write today to Dept. 740-Z.

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Plan to visit the Metropolitan's exhibits at the ***New York World's Fair*** *and at the* ***Golden Gate International Exposition in San Francisco.***

SUMMER'S HERE

(Continued from page 598)

Vacation can mean spending money or learning new skills or just loafing and having a good time; but see to it that you don't waste your children's leisure when there is so much of interest and benefit with which to fill it. Indeed, the chances are that the long summer vacation will pass so quickly if you are busy that I'll bet dollars to fresh made doughnuts you'll heartily echo your children's wail, "Gosh darn, Mom, school starts tomorrow. Where's the summer gone to, anyhow?" and that not once in the whole two months will you have heard the deadly, dreaded whine, "What'll I do now, Mom?"

OPEN DOORS TO CHILD HEALTH

(Continued from page 618)

clinic or not, would have their own family physician see that their children follow the splendid, sane pediatric program that is prescribed and practiced by the hundreds of brilliant child specialists in the many children's clinics over the country, there would be stronger, healthier, happier children throughout the world. Certainly—and I know from experience—the results are worth the effort. For, after all, what more could any mother ask, not only for her children now, but for her babies-to-be, than to have them well and robust through life?

TYPHOID DEATH RATE CONTINUES TO DROP

Typhoid deaths in the ninety-three largest cities of the United States dropped from 291 in 1938 to 265 in 1939, thus continuing the consistent downward trend in the mortality rate from this disease during recent years, *The Journal* of the American Medical Association declares in its twenty-eighth annual report of typhoid deaths.

The 1939 rate per hundred thousand of population was 0.67 as compared with 0.74 in 1938. Thirty-four cities reported no deaths from typhoid, an increase of five over the previous year. Cities of the New England states had the lowest rate, 0.23, representing six deaths as compared to the twelve in that region in 1938.

STRANGE BATHING CUSTOMS

(Continued from page 590)

than Sir Walter Raleigh's cloak, the one he spread for Queen Elizabeth to trip across the Thames at low tide. It could also serve as the main sail of a yacht.

"Wet and shivering you grasp the huge bath towel and strive to enfold it about you. And now begins the struggle. First it attempts to strangle you. Meanwhile the lower folds of this dog-and-pony circus tent are trying to trip your ankles. Now, as you strive to dry your shoulder blades, the immense towel gets a half-nelson on you, a toe-hold and a scissors grip. You are a one-man Laocoon group which no sculptor will ever chisel.

"So far I have emerged wet but triumphant from every round with these banquet tablecloths. But who can tell? One of these days a big rough bath towel is going to pin me to the bath mat and trample upon my pallid form."

The Laplanders and the Eskimos iron out these annoyances by an extremely simple expedient: They don't bathe.

The lamas or Buddhist priests of Tibet feel the same way about it. They never bathe or wash their faces, and in the course of years accumulate strata of dirt like a geologic formation. Bathtubs are unknown, and for them, it would be heresy to get into one.

In India, the average native is content with a simple tub filled with cold water from a large earthen vessel. Others bathe in the nearest river, immersion being part of the Hindu's religion. The Europeans in heated India are also forced to bathe under primitive conditions. These include a large size tub and cold water.

A snake in the grass, one feels convincingly is bad enough; but a snake in the bathroom is a little too much. In India Europeans have learned to avoid sponges and to look before they leap into a tub, especially in the spring. Venomous snakes, awakening from their winter sleep, glide into bathrooms and make of them their abiding places. If the white man does not look first, he may not live to indulge in further ablutions.

On the deserts of Arabia, where water is necessarily used only for drinking, the desire to keep clean is accomplished in a rather "rough" manner. Instead of using water for the bath, the Arab vigorously rubs himself with the sand of the desert.

When a native Ethiopian wants to take a bath, he goes to a stream, kicks out the sheep, goats and cattle and washes himself. Most of the natives never get around to doing this, however. The most popular form of bathing for the white person in Ethiopia is the good old-fashioned crockery pitcher-and-bowl variety.

In Luberitzbucht in Southwest Africa, one of the driest places in the world, the importance of wasting no water is definitely impressed on the visitor who wants to take a bath. A 4 gallon tin of water costs $1. Every extra gallon costs an additional 25 cents. Moreover, this is for the "rent" of the water only, and not for its purchase, for the water is afterward used for watering the few plants that grow in the barren ground.

On returning from Belgium a traveler reported that the apartment house, in which he lived during his stay there, was a new building, but he had been obliged to furnish his own bathtub and other bathroom fixtures. When he moved to another apartment, he carried his bathroom fixtures with him.

In the splendid baronial castles of England the nobility have priceless tapestries on their walls, a fortune in old silver on their sideboards, a silver basin and ewer on their washstands. A flush toilet of modern design is nonexistent. The bath is an elaborate undertaking for the servants, who have to carry in tall ewers of hot and cold water and set them on the floor beside the bathtub. When the bath is over, all the paraphernalia must be carried out.

Several years ago a survey was made of English hotels. This survey is reported to have revealed that during a specific summer, there were about 100,000 Americans visiting in London at one time or another, but only 4,000 hotel rooms of the modern type demanded by Americans were available in the entire city.

During the winter, the only times you can be sure of being warm in the average British hotel are when you are in bed or in the bathroom. No true Britisher would dream of drying his body except with a towel which had been previously warmed. Therefore the bathrooms are supplied with great silvery pipes filled with hot water, on which the towels hang. Towels must be warm; to this rule there is no exception. Hence, even in a midsummer hot spell the bathroom will be 20 degrees hotter than the stifling bedrooms. Hotels of this type have one bathroom on each floor.

"Built-in" bathroom fixtures of the type now fashionable in the United States, for instance, are more or less against the law in England, and the English are a law-abiding race.

The legal ban on ultramodern bathrooms is only "more or less," because if one has a private water supply, one can make his own regulations. Thus a few hotels and other large establishments drawing water from their own wells enjoy bathroom luxuries which the ordinary householder connected with the public mains could not install without breaking the law. In practice, as one London architect said, it discourages the adoption of any bathroom innovations and trains the builder to avoid arguments with authorities by keeping his plumbing old-fashioned and his pipes as much as possible out in the open, where any one can see what's wrong with them when they go wrong.

Compared with Russia, conditions in England aren't so bad. In Russia, a bathtub costs 2,000 rubles —more than a grand piano. Soap is unknown, and the average Muscovite takes one bath every eighteen months. Bathtubs are usually used for storing coal or vegetables, or both, and even in new apartments, water cannot be raised above the fourth floor.

The only place the traveler will find hot water in Russia is in the large hotels. Even these places aren't well equipped to give good plumbing service. Each floor has but one bathroom, and if you want a bath you have to make a reservation. For instance, if you asked for a bath Monday, you probably would get it Wednesday.

A hotel room in Russia, without bath or running water of any sort, is $7 a day, and soap is worth its weight in rubles, or $3.50 a cake—if you can find the soap.

Russia has not yet reached the zinc bathtub era which America left

behind a generation ago. Instead, the inhabitants depend on state managed bathhouses.

In the town of Karaganda, which boasts of one small bathhouse to fill the needs of some 50,000 persons living in this district, there is one scrub brush.

The prospective bather must first open negotiations with the management of the bath, who requires him to deposit his passport (if he is a foreigner) to insure the return of the brush. He carries it like a banner into the steam room. There, under the envious eyes of less fortunate bathers, he scrubs himself luxuriously. Often he scrubs himself twice, while the others watch with silent reproach. When he is finished, the brush is dried and rented again.

The chief difficulty for bathers lies in the shortage of soap, not to be had in Russia at even the most exhorbitant prices. Many meet the situation by beating their bodies with bundles of birch twigs, the theory being that this opens the pores and permits steam or hot water to complete the cleansing process.

Sanitary conditions in Spain are positively abominable. The important hotels, fortunately, are models of cleanliness, but the large resort towns, usually visited by tourists, are oddly behind times.

In Paris only 25 per cent of the population have a private bath in the home. There are 100 public baths, with on the average of twenty tubs to each. Statistics compiled from this information show that the average Parisian takes three baths annually and that the French capital is the cleanest city in France.

Within the last few years, however, the railroad station, *Gare de l'Est* in Paris, has been equipped with all the comforts of home for the traveler. These include installations of bathrooms and manicure rooms. France has, moreover, been frantically installing bathrooms in the last ten years at an ever increasing rate to satisfy the tourist trade.

The Parisian landlord either has no faith in his plumber's ability to find a leak if hidden behind lath and plaster, or he hasn't been told it is possible to build houses without exposing all the electric wires and water pipes. Pipes run the gamut around a French room, pipes stand up in a corner, pipes sneak along moldings, pipes protrude in unexpected places. The landlord in America could take a building of thirty years ago and let the plumbing stand just as it was when installed. Then he could advertise "a strictly Parisian apartment—absolutely as you would find it in Paris."

He could, but he doesn't. He knows better. An unmodernized building of thirty years ago would be a white elephant to any American landlord. The American public knows what it wants when it comes to plumbing. Even in a low cost home, around $2,500, there is a low built-in tub and a shower of the small water-saving design to go with it. There is nothing old-style about the fixtures, either. The fittings will be well above the rim to prevent back-siphonage of the water and consequent water pollution.

The lavatory is a smart, modern room with plenty of space to put a powder puff and powder or razor and accessories. The wash stand might be wall hung; the chances are that it has graceful, chromium-plated legs equipped with integral towel racks. The water closet in the budget home stands away from the wall, is close-coupled (this means that the water tank and the closet are set close together so that no connecting pipe shows) and quiet in operation.

The owner of the budget house buys linoleum for his floor, waterproof paper or boardtile for the walls and lets his heart rule in the choice of the color scheme.

The home owner in the higher brackets goes in for a more elaborate setting, and his closet is probably of one piece; he has a dental lavatory in his bathroom, and his plumbing fixtures are of some harmonious color; but the same underlying principle of good workmanship and efficient operation is embodied in both sets of fixtures. It has to be. If the American tenant doesn't get what he wants in one dwelling, he moves into another that does fill his requirements. In Europe, there's no place to move to—unless you prefer the fire to the frying pan.

INJECTING INSULIN

The injection of insulin into the veins rather than under the skin in order to produce rapid shock with a minimum of coma may be found a valuable aid in the treatment of certain mental diseases, Phillip Polatin, Hyman Spotnitz and Benjamin Wiesel, New York, suggest from investigations which they report in the *Archives of Neurology and Psychiatry*.

Insulin has usually been administered under the skin to patients with the type of insanity known as schizophrenia, characterized by cleavage or fissuration of mental functions. The shock and prolonged coma thus produced often prove beneficial in alleviating the mental disturbances of such patients.

By using the vein injection method, the New York scientists produced shock more rapidly than with the usual method; twenty-three patients with various mental disturbances were given daily treatments over a period of from two to thirteen weeks. The patients were asleep 45 minutes after the injection.

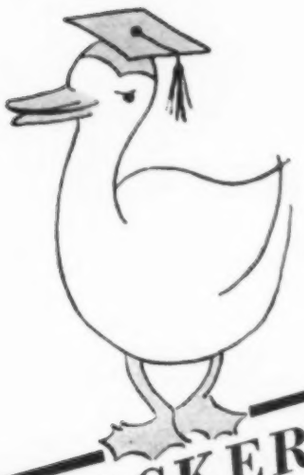
There was general improvement in the physical condition of the patients, and 48 per cent revealed some degree of mental improvement. Ten patients with schizophrenia were treated over a period of two months or more, and 70 per cent showed some improvement in their mental state. "The utilization of this method in the treatment of mental disease deserves further investigation," the authors state.

Discussing the advantages of this method over the usual technic, they declare that it was completed in less time, the total amount of insulin was less, and a minimum of nursing supervision was necessary. Patients usually recovered spontaneously from the shock to drink a dextrose solution offered them, and none of the patients received any detectable injury.

HOT BATH

A hot bath, the standard lay treatment of a convulsion, has no particular value and may be a dangerous procedure, M. G. Peterman, Milwaukee, warns in the *Wisconsin Medical Journal*. "In the excitement of treating a convulsion, the bath water is often too hot for safety, and severe burns have resulted," he says.

DUCK the "sure-cure" lure



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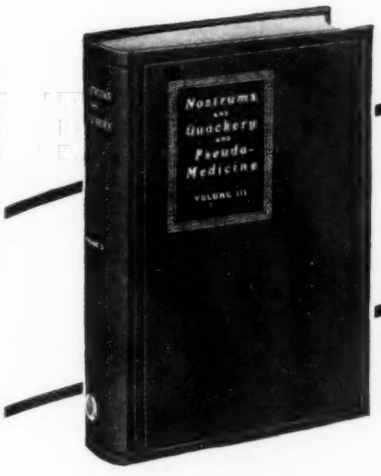

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By ARTHUR J. CRAMP—
Director of the Bureau of Investigation of the American Medical Association (1906-1935)

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COFFEE and Similar Products

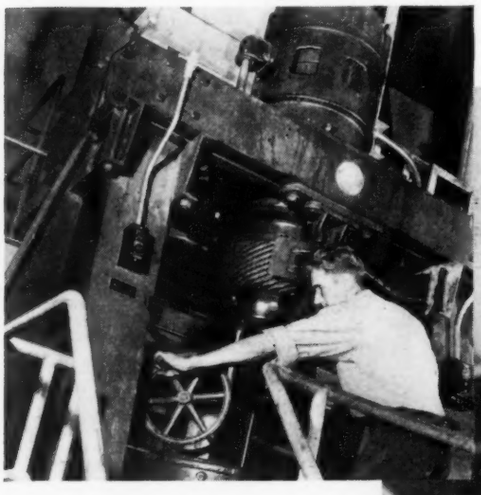
FROM earliest history, man has made beverages by brewing the leaves, barks, roots, seeds, fruits, nuts and flowers of various plants in hot water. Of the many beverages tried, only those made from plants containing caffeine, theobromine or a similar stimulant have persisted through the centuries. The *kola* of Africa, the *maté* and *guarana* of South America, the *chocolate* of the Aztecs and the tea, coffee and cocoa so popular in this country are all beverages that contain caffeine or theobromine.

Most normal adults may indulge in moderate amounts of such beverages without injury or possibly even with benefit. Others find that the continued use of coffee and tea even in moderate amounts has a detrimental effect on them, especially in overstimulation of their nervous systems.

Whether or not coffee may be used by children is a perennial question. It is generally recognized that unrestricted quantities of coffee are not desirable for children. It is likewise recognized that a child should drink milk. Because a child will take only a limited amount of fluid a day, it is important that no other beverage replaces milk.

For those who cannot tolerate the stimulating effect of coffee, decaffeinated products and cereal substitutes are available. Several processes have been patented for the removal of caffeine from coffee on the assumption that this is the injurious ingredient. One process depends on the extraction with water, removal of caffeine from this extract and return of the residue to the coffee. Decaffeinated products carry a description of the product on their label.

The cereal substitutes consist of a mixture of bran, wheat and molasses, ground and roasted, from which hot beverages of pleasing flavor may be prepared. Cereal substitutes contain no stimulating ingredient and are designed to be used with milk or water.



The caffeine may be taken out of the coffee bean to render it less stimulating. This is accomplished by the machine above. But the natural coffee product, as typically seen at right, is fully enjoyed by most persons.

A substitute for coffee that is common in the South is chicory, a root vegetable that is dried, ground and roasted. In some sections, for example in New Orleans, chicory is considered a desirable addition to coffee. In the opinion of many persons, it improves the flavor. Naturally its presence in commercial preparations of coffee must be declared on the label in order to conform to regulations set forth by the Food and Drug Administration.

The coffee bean as purchased is the roasted seed of the coffee tree. Coffee trees are apparently indigenous to Ethiopia and other parts of tropical Africa but were introduced into Asia, the East Indies and later into the West Indies, Central America and South America. At the present time three fourths of the coffee shipped to this country comes from the plantations of Brazil.

From April to August natives of Brazil gather the ripe red coffee cherries which grow in clusters around the base of the stems of bright green oval-leafed shrubs. After the coffee is gathered, the red skin of the coffee berry is removed along with a fruity pulp and a silvery parchment, disclosing two green coffee beans. These beans are polished, sorted by sizes and sacked for shipment to the United States. In the United States the coffee is poured out of its sacks into other sorting machines where further sizing takes place, and then by succession it is carried along to a milling machine which cleans it. This coffee is known in the trade as "green coffee."

Before the coffee seed can be used in the preparation of the beverage, it must undergo the process of roasting, during which the coffee bean swells somewhat, its color is changed to dark brown or almost black, depending on the degree of roasting, and it acquires the characteristic odor and flavor that we know as coffee. Roasting drives off most of the water, carmelizes a large part of the sugar, reduces the caffetannic acid by about half and develops coffee aroma. The physical nature of the bean is also altered by roasting, the raw bean being tough and horny, whereas the roasted bean is brittle. It is the roasted coffee bean that we see in grocery stores.

Until coffee is roasted, aging is believed to improve most varieties; but after roasting and grinding, the volatile compounds which give to coffee its aroma and flavor dissipate, and the coffee rapidly deteriorates. For this reason it is best to buy the whole bean and have only a 3 or 4 days' supply ground at a time.

Coffee has no food value. Persons who use cream and sugar in their coffee have added a little food value, mainly calories.

The amount of caffeine and theobromine found in a serving of coffee as commonly prepared follows:

Beverage	Amounts Used in Preparation of Average 6 Oz. Serving	Caffeine and Theobromine, Grains
Coffee	1 tablespoon	1.8
Coffee	2 tablespoons	3.6

ACCEPTED COFFEE AND SIMILAR PRODUCTS

The following brands of coffee and similar products have been accepted by the Council on Foods of the American Medical Association and are described in the book "Accepted Foods and Their Nutritional Significance" published by the American Medical Association.

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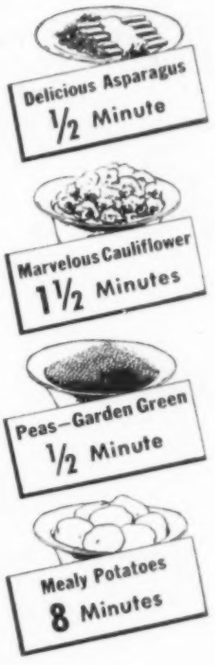

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REFINEMENT of FOOD (Continued from page 623)

erative changes in the spinal cord of chicks. The first three, thiamin, riboflavin and nicotinic acid are known to be necessary for the normal nutrition of man. Their lack in the diet produces specific symptoms. It is not now known whether vitamin B_6 and pantothenic acid play any role in human physiology, but it will not be surprising to find that they do.

The deficiency effects of thiamin or vitamin B_1 have been studied in man and in animals since 1897, when beriberi was first recognized as a dietary disease. The most striking symptoms associated with its lack in the diet are, first, a marked loss of appetite and retarded growth in the young and later a multiple peripheral neuritis (in animals the deficiency state is called polyneuritis), frequently gastrointestinal disturbances, enlargement of the right side of the heart and in some animals a slowing of the heart rate. By determining the amounts of vitamin necessary to prevent one or more of these symptoms in animals, a basis is established for estimating the daily requirements for that animal. There appears to be little storage of the vitamin in the body, so adequate amounts must be ingested daily.

In 1934, Cowgill working at Yale University made extensive studies of this type on mice, rats, pigeons and dogs and concluded that the vitamin B_1 requirement depended on the calories consumed and the weight of the animal. He derived a formula $\frac{\text{vitamin } B_1 \text{ requirement}}{\text{calories}} = \textit{Body weight } x \textit{ a constant}$ which was applicable to the four species of animals studied. Extending this formula to man, he calculated the vitamin B_1 requirement for human beings of different weights and caloric intakes. Next he estimated the vitamin B_1 content of 180 diets, which have been used by large groups of persons in different parts of the world. Experience had shown some of these diets to be severely productive of beriberi; some were borderline, and some provided complete protection against beriberi. He was gratified to find that the $\frac{\text{vitamin}}{\text{calory}}$ ratio of the diets which protected against beriberi agreed well with his predicted ratios. This illuminating study of Cowgill's has provided a guide for estimating the vitamin B_1 requirements of human beings and for evaluating the adequacy of diets with respect to vitamin B_1. Cowgill himself concluded that typical human dietaries are often inadequate and that a subacute state of deficiency is common.

Recently, in a clinical study of the adequacy of vitamin B_1 in the American diet, Norman Joliffe analyzed eighteen diets of families of wage workers living in industrial communities in three regions of the United States. These diets were tabulated from 1934 to 1936 by the Bureau of Home Economics. Joliffe found that whenever the expenditure for food was below $2 per person per week, the $\frac{\text{vitamin}}{\text{calory}}$ ratio fell dangerously near to the borderline. The average American dietary suggested by Sherman [1] in his "Chemistry of Food and Nutrition" provides only a 20 per cent margin of safety. Joliffe believes that even though such diets may protect against beriberi under ordinary conditions, when some factor enters which greatly increases the vitamin B_1 requirement, such as pregnancy and nursing, these borderline diets become deficient.

Audrey Baker and Margaret Wright, two English vitamin investigators, have made similar studies of typical English dietaries and reached similar conclusions. They made the further observation that while poverty may be responsible for much malnutrition, the exclusion of certain foods on the grounds of indigestibility, dislike or trouble in preparation is frequently a more important factor. That it is possible to provide adequate vitamin intake in a low cost diet was demonstrated by the New York Budget Council. In September 1938, they published planned dietaries calling for expenditures of $1.75 and less per person per week, in which the $\frac{\text{vitamin}}{\text{calory}}$ ratio was well above the protective level.

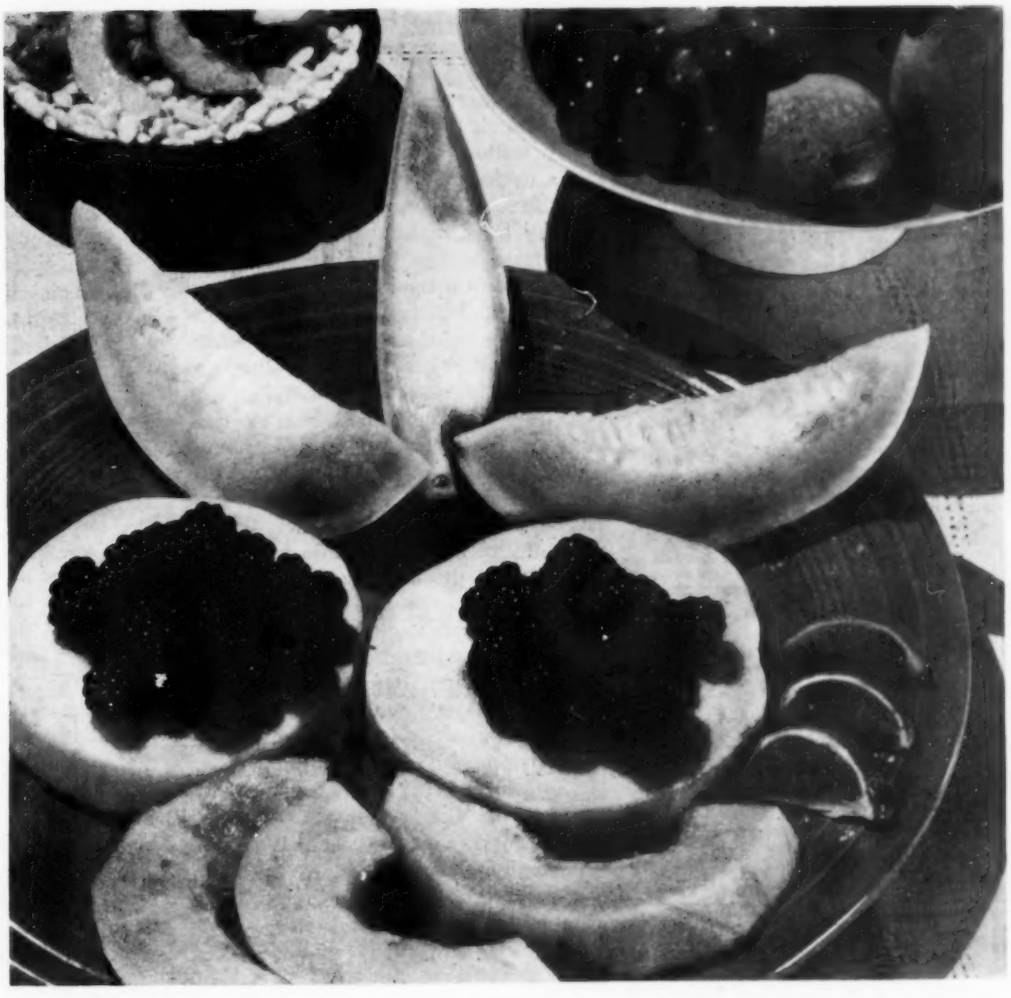
Until last year when crystalline thiamin became available, it was possible to speak quantitatively of vitamin B_1 only in terms of its potency in promoting growth or in preventing or curing beriberi. Each laboratory established its own method of assay and its own unit of potency. The need for a common reference material of known and constant potency led the Committee on Vitamin Standardization of the League of Nations to direct the preparation of a quantitative test of vitamin B_1 concentrate. Ten milligrams of this adsorbate was then established as the international unit. This international standard has been extremely useful in comparing work from different laboratories. Undoubtedly, pure thiamin will soon replace the impure standard.

Applying information obtained from such studies as Cowgill's, the Council on Pharmacy and Chemistry of the American Medical Association stated in 1936 that, on the basis of knowledge then available, the minimum daily requirement is 50 international units for infants and 200 international units for the average adult. Most authorities now regard these standards as minimum and place optimum levels at 400 to 600 international units per day for adults. Under special conditions, such as growth, pregnancy, nursing, excessive exercise and hyperthyroidism, the requirement may be as high as 1,500 international units. Yet "good" American dietaries, containing the amounts of protective foods which have been considered adequate, provide only 200 to 250 international units. Indeed, nutritionists are finding it difficult to plan diets which meet the minimum requirements for B_1 and still include the quantities of white bread, sugar and other refined foods to which people have become accustomed. To satisfy the optimum standards is well nigh impossible.

NOTE.—Next month, Mrs. Koch will further discuss the vitamin B complex with relation to modern American dietaries.

1. Sherman, H. C.: Chemistry of Food and Nutrition, ed. 5. New York, Macmillan Company, 1937.

—National Safety Council



Honeydew melons are delicious when served with fresh berries or when eaten plain with the juice of a lemon.

MELON TIME

By HARRIET MORGAN FYLER

CUTTING a melon is a pleasure that millions of persons can afford this summer. The largest melon crop on record is promised this year, which usually means low prices. From the Far West a plentiful supply of honeydews and cantaloups is coming to market, and the South is sending up watermelons in abundant quantities.

This ought to be real news for meal planners; with the thermometer hitting such heights, the entire family craves something cooling and refreshing. Cold melon, surely, is one of the compensations of the searing dog days of July and August, and as a thirst quencher it has few peers.

Melon is a general term applied to the sweeter fruits of the gourd family; the less sweet members of this family are the cucumber, pumpkin and squash. Although the pumpkin and squash are indigenous to America, the melon is an imported product. Melons may be divided into four groups, muskmelon, cassaba melon, a winter melon and watermelon. In the United States, consumers are accustomed to buying many varieties of muskmelon under the name "cantaloup." The term cantaloup was originally confined to mean a variety of muskmelon (Cucumis melo) which was grown at the Cantaloup Castle near Rome from seed imported from Armenia. Some varieties of melon are known by their correct names. Among them are the cassaba melon, a melon introduced into this country from Asia Minor; the honeydew melon, a variety of cassaba melon now grown extensively in California; the honeyball melon, a cross between the Texas Cannon Ball cantaloup and the honeydew, which is smaller than either of the parent fruits and has a thin, yellow skin and firm, pink flesh, and the watermelon, a fruit originating in Africa, a fact that may explain the Negro's fondness for it.

Melons might be described as the fruit of tomorrow, since their

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flavor seems to improve each season through experiments in cross breeding. The old-fashioned muskmelon which an earlier generation of Americans compared unfavorably with a pumpkin is as extinct as a dodo. Ever since 1890—when the first shipments of the famous Rocky Ford melon were made from Colorado to eastern cities and convinced connoisseurs that here was a fruit with a future—plant breeders have made a persistent effort to improve this fruit for the national table.

The "Globo d'Oro" melon that comes from California's Imperial Valley shows the hand of the breeder-stylist. It looks like a honeydew on the outside, like a cantaloup on the inside and has a taste about midway between the two. Another fruit is the No. 45 cantaloup developed at the California Agricultural Experiment Station by patient crossing and backcrossing of the well known Hale's Best cantaloup with a resistant variety imported from India. It has cantaloup flavor at its best: deep, firm flesh and small seed cavity; such good carrying qualities that it can be picked field-ripe and shipped long distances safely, and that rarest of all virtues in a cantaloup, uniformity in taste and texture as well as in shape and size.

Watermelon also has been improved by plant breeders. A smaller variety of watermelon, which is more suited to the size of the modern refrigerator, with its smooth, regular shape and a larger edible part in proportion to waste and of course better flavor, has been developed at the government's new plant breeding laboratory at Charleston, S. C.

The varieties of melons that may be found in your neighborhood store depend on where you live. In many sections of the country certain local varieties of cantaloup and watermelon are popular among consumers. For instance, in Illinois and Indiana, the Tip Top cantaloup, a locally grown melon, is much in demand. The nationally popular cantaloups are the Netted Gem, grown for the most part at Rocky Ford, Colo.; Hale's Best, No. 45 and Hearts of Gold grown in California, Arizona and Texas.

The watermelon that is "tops" all over the country is the Tom Watson, a large cylindrical watermelon with deep green, faintly veined skin, weighing from 30 to 40 pounds. Thurmond Gray variety is another popular watermelon, weighing about the same as the Watson but differing in appearance. Its rind is a light grayish green in color and is thin and tough. Other consumer preferences are the Cuban Queen, round to oval in shape with a rind striped light and dark green; the Dixie Belle, a round melon grown in Georgia, and the Winter King and Queen, grown in Colorado. About 90 per cent of the watermelons that reach city markets are grown in Georgia, eastern Texas, California, Florida and the Carolinas.

Selecting Melons

A cold slice of melon is satisfying only if the melon is juicy and sweet. Quality in melons means flavor, but too frequently buying a melon is a gamble. Choosing a good melon in the market is easy, if you know how to judge ripeness. A vine-ripened melon is the secret of well flavored melons. The best test for detecting a vine-ripened melon is the stem scar. If the scar is smooth, clean and cuplike, it means that the melon was picked at "full-slip" or when ripe enough for the fruit to separate easily from the stem. A melon picked at "half-slip"—or at a less ripe stage—will have some of the stem still adhering.

Additional signs of ripeness are color and odor. A ripe honeydew has a creamy, yellow color, and the area around the scar yields to slight pressure. Another sign of ripeness is a slight, pleasant odor. The same signs should guide you in selecting honeyballs.

Signs of ripeness for the cantaloup, in addition to the scar, are the netting or veining on the outside, the color and the aroma. The netting or veining on the outside should be coarse and of a grayish color, should stand out in bold relief on the melon and should cover the surface to an extent depending on the variety. The dark green color under the veining should have turned to a lighter shade, and may have either a grayish or yellowish tinge. The distinctive cantaloup aroma should be present.

Several tests have been suggested for determining the ripeness of watermelons. One of the most common is "plugging" the fruit. It is a reliable test, but one that is not

to be recommended since the pulp sours quickly after exposure to air. Produce men use the "thumping" method; they know that a ripe melon gives a dull, hollow sound when it is thumped. But for the buyer unacquainted with the subtleties of thumping watermelons, the "scratching" test is the safest. If the melon is ripe, the green skin will come off easily when scratched. In general it is better to choose a large, well shaped melon. If, in your neighborhood, melons are sold in sections, it is better to buy halves or quarters of a big one than to select a whole undersized melon.

The Persian melon is the most difficult melon to select, and unless it is eaten at exactly the right stage of ripeness, its good qualities are not apparent. A ripe Persian melon with flesh of deep pink color has a superb flavor. The Persian melon is called the ugly duckling among fruits, because its uninviting exterior contrasts with its distinctive taste. Its signs of ripeness are similar to those of the cantaloup.

Quality standards have been defined for cantaloups and watermelons by the Bureau of Agricultural Economics of the U. S. Department of Agriculture. According to these standards, there is one grade for cantaloups "U. S. No. 1" and two grades for watermelons, "U. S. No. 1" and "U. S. No. 2"; each grade has its requirements for size, shape, quality, ripeness and freedom from damage. Since these grades principally help the growers and the trade and do not appear on the individual melons as consumers buy these fruits, the grade specifications will not be included here.

Nutritive Value of Melons

Although cantaloups and melons have always been prized for their flavor, they were believed until recently to have scant food value. Experiments have proved, however, that both fruits are excellent sources of vitamin C, the vitamin found chiefly in citrus fruits and tomato. A 4 ounce serving of melon does not provide as much vitamin C as a 4 ounce serving of orange juice, but no person stops at a 4 ounce serving of melon. He finishes off a half cantaloup or a plate size slab of watermelon, only to ask for more.

The vitamin C content of a food is expressed in terms of international units or in terms of milligrams of

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ascorbic acid, the chemical name for vitamin C. The daily requirement for vitamin C is also expressed in terms of international units. This daily requirement is said to be 1,000 international units of vitamin C.

One half cantaloup of the Rocky Ford variety, weighing about 18 ounces, will provide about 350 international units of vitamin C or one third of the daily requirement. Other varieties contain somewhat less vitamin C; but the average size cantaloup, 38 ounces, may be expected to furnish 625 international units of vitamin C. A serving of watermelon, weighing about 1 pound, may be expected to provide about 190 international units of vitamin C. This size serving of cantaloup would furnish about 140 calories, and such a serving of watermelon would furnish 160 calories. According to the method of the American Medical Association's Council on Foods for rating a food, both fruits would be rated as excellent sources of vitamin C. The Council on Foods rule is "When one tenth of the day's requirement is furnished by a food which appears in the diet practically every day, and in which the portion contributing one tenth of the essential furnishes not more than 100 calories, the food may be classed as an 'excellent' source."

Cantaloups are a fair source of vitamin B_1. A serving of cantaloup (about 18 ounces) may be expected to furnish about 100 international units of vitamin B_1, or one sixth of the daily requirement. Watermelon contains less vitamin B_1 than cantaloup.

Both fruits contain vitamin A. A serving of the Tom Watson variety of watermelon will provide about 325 international units of vitamin A. The daily requirement for vitamin A is about 4,000 international units. A serving of cantaloup may be expected to furnish about 1,500 international units of vitamin A.

Melons are ideal hot weather foods, because they are short on calories and long on thirst-quenching properties. Watermelon is 93 per cent water and contains about 140 calories a pound. Cantaloup is 94 per cent water and provides 125 calories a pound. Meal planners with an eye for vitamins as well as palatability can wisely include one or more servings of melon in each day's meals during the few weeks that these nutritious fruits are in season.

Cantaloups and honeydews find their widest use at the breakfast table, but they also have a place at other meals. In the melon cup they are often combined with watermelon balls and garnished with mint, and in salads they are valued for their decorative effect.

Watermelon is always welcomed as a luncheon or dinner dessert. At one time the watermelon rind was thought to be mere refuse, on which only hogs might feast. Today it is put to better uses, and pickled watermelon rind is in high favor as a relish. The pink flesh is used often as an appetizer in watermelon cocktail, which may be flavored with shredded pineapple or with lime juice or grape juice.

Pickled Watermelon Rind

Rind from 1 large watermelon
7 cups sugar
1 pint vinegar
½ teaspoon oil of cloves
½ teaspoon oil of cinnamon

Cut off the dark green skin and pink portion of the watermelon rind. Cut the white rind into small cubes, about 1 inch in size. Cover with hot water, and boil until the rind can be pierced with a fork, but be careful not to let it get too soft. When the rind is tender, drain off the water. Heat the sugar, vinegar, oil of cloves and oil of cinnamon until a thickish sirup is formed. Using the oil of cloves and oil of cinnamon keeps the rind clear and almost transparent; if the dry spices are substituted, tie them in a bag. Pour the hot sirup over the rind, and let stand overnight. The next morning heat both the rind and sirup to the boiling temperature, and boil 10 minutes. Pour into jars and seal.

Fruit Salad in Melon Bowl

2 cups watermelon balls
2 cups cantaloup melon balls
2 cups honeydew melon balls
1 cup diced pineapple
1 cup raspberries
1 cup fresh pears or peaches
1 good sized, well shaped watermelon cut lengthwise

Scoop out the melon balls with a cutter made for that purpose. Notch the edges of the watermelon rind sawtooth fashion. Keep this and the fruit cold until serving time, then place the melon shell on a platter decorated with lettuce leaves, and fill with the mixture of fruit. Serve at the table. A salad

dressing may be passed, letting each guest help himself. The following dressing is suitable for this salad.

3 egg yolks
3 tablespoons sugar
¼ teaspoon salt
Juice and grated rind of 1 large lemon
½ cup water

Beat egg yolks until light and thick; add sugar, salt, grated rind of lemon and juice, and beat until the sugar is dissolved. Add water; pour mixture into top of double boiler and cook, stirring constantly until thick. Cool and chill thoroughly. Add 1 cup of whipped cream just before serving.

Simple Ways with Melons

Large cantaloups, honeydew melon, cassaba melon and Persian melon are usually cut in lengthwise wedges, three or four inches wide, and served with lemon or salt or both.

Small cantaloups and honeyball melon are cut in half and served with salt. Cantaloup halves filled with black cherries stuffed with filbert nuts and rolled in powdered sugar, make a most attractive course for a summer luncheon or dinner. Fresh berries, sliced peaches or a fruit salad are also good for "stuffing" a cantaloup.

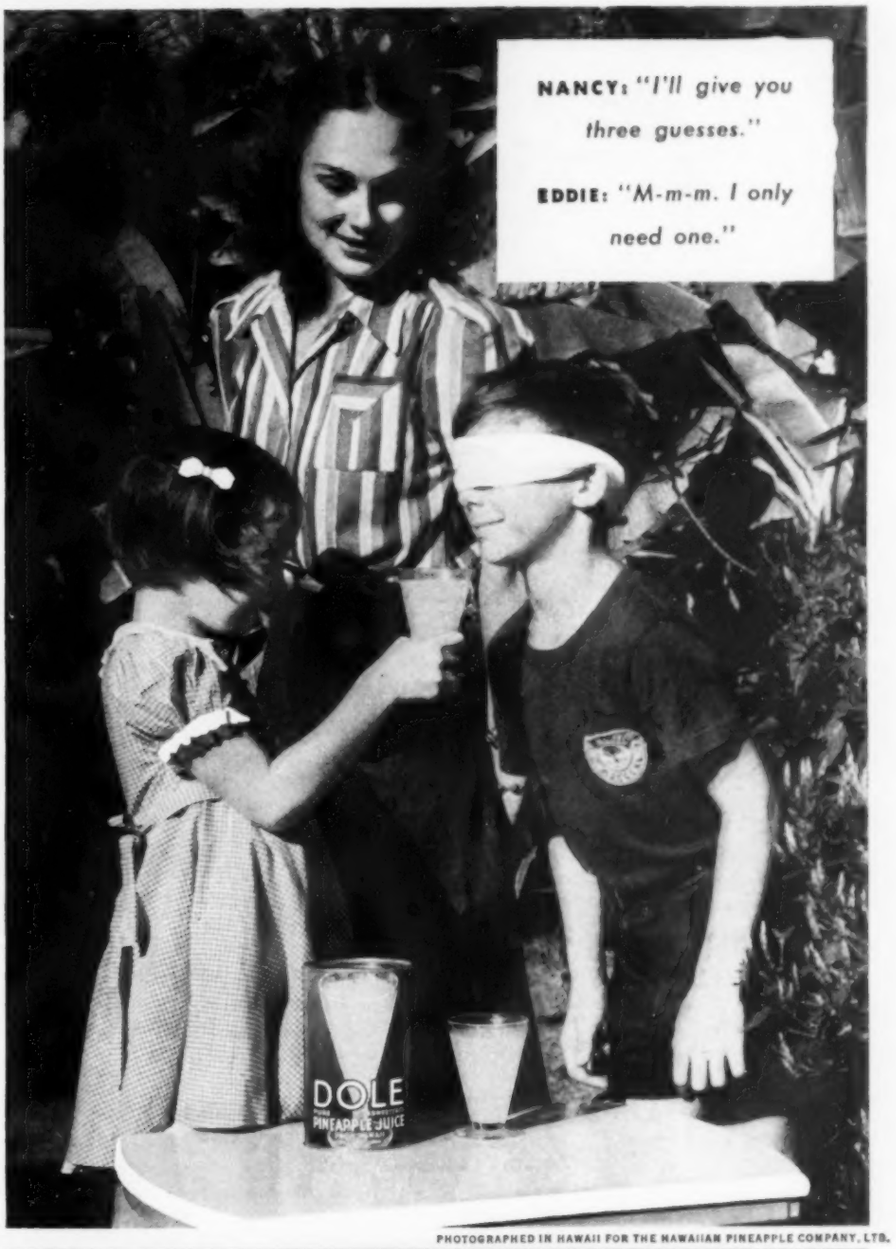
Balls of melon, made with a vegetable scoop, combined with grape juice flavored with lemon juice make an appetizing cocktail.

First Aid to the Picnic Planner

With all the modern picknicking aids, it is easy to make the outdoor meal simple and nutritious. Vacuum jugs will keep food hot or cold for hours. A casserole of scalloped potatoes or of mixed vegetables will also hold its heat for an hour.

The fireplaces in local, state and national parks make cooking easy at the picnic grounds. You can prepare meat and vegetables at home, and then reheat them over the outdoor fire. Sometimes each member of the family may want to cook his own meat on the end of a green stick or on a long-handled fork. Wieners, kabobs or bacon can easily be roasted in this way.

Raw vegetables as a relish or salad are an important part of the 1940 model picnic. Keep carrot and cucumber sticks, celery, radishes or green onions fresh and crisp by cooling and then packing them in glass jars.—*U. S. Dept. Agriculture.*



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MARY: Yes, isn't it wonderful, Jane, that eating a grand-tasting cereal every morning can give such wonderful *extra benefits!*

IMPORTANT: Post's Bran Flakes, due to their bulk, are a *regulative* cereal. Constipation due to insufficient bulk in the diet should yield to Post's Bran Flakes, eaten regularly—as a cereal or in muffins. For cases not corrected in this simple manner, a physician should be consulted. Post's Bran Flakes are a Post cereal—made by General Foods.

HEALTHGRAMS

FROM ARTICLES IN THIS ISSUE

¶By careful, patient treatment, even the worst cases of superfluous hair can be cured. *See page 584*

¶The American public knows what it wants when it comes to plumbing. . . . If the American tenant doesn't get what he wants in one dwelling, he moves into another that does fill his requirements. *See page 587*

¶"When in Rome do as the Romans do" favors bacillary dysentery and other intestinal infections, not you. *See page 591*

¶The tuberculin test is now considered the most accurate test that is available for any disease. *See page 602*

¶One of man's mortal enemies among infection-carrying parasites is the commonly known wood tick. *See page 607*

¶A normal concern about your health should take you to the family doctor once a year for a general check-up. *See page 610*

¶An autopsy is an operation which yields the incontrovertible reason why death occurs; it represents the consummation of a surgeon's artistry and a scientist's dream. *See page 613*

¶There are many reasons for crooked teeth, and something could be done about it by indulgent mothers, if they only knew the thing to do and when to do it. *See page 630*

¶In his wisdom the doctor is quick to see that beyond the improvement of the exceptional child's physical ills and handicaps, lies a further need for special educational treatment and training. *See page 633*

¶Muscles accommodate themselves in great measure to the demand made on them. *See page 655*

Paean

On Sunday noon a meadowlark swung
On the single strand of an aerial strung
From standards set on the top of a hill,
And he sang his song in the midday still.
Ripple on golden ripple rolled
Till the hills were filled in their every fold,
And the gap from heaven to earth was filled
By the utter joy of the notes he trilled,
While the sunlight fell with a special glisten
On faces looking up to listen.

—VIRGINIA BRASIER.

DEADLY DISEASE NUMBER 6

(Continued from page 606)

approximately 15 years. For example, there were 10,722,252 children under the age of 5 years in the United States in 1936; but only 716 from 3 to 5 years inclusive died from tuberculosis in any form. Thus, the number who died from chronic pulmonary tuberculosis was almost negligible. At the same time there were 24,403,489 children from 6 to 15 years of age inclusive; but among this group there were only 1,807 deaths from all forms of tuberculosis. Probably the main reason that children, like the young of lower animals, so rarely become ill or spread tubercle bacilli to their associates is that chronic forms of pulmonary tuberculosis develop too slowly to cause illness before adult life is reached. However, persons who are infected with tubercle bacilli in childhood stand a considerable chance of becoming ill from the disease at some time during adult life.

Numerous attempts have been made to treat healthy but infected children in preventoriums and sanatoriums so that they would not fall ill in adult life, but to date there is no convincing evidence that such treatment is of any avail. The nature of the disease is such that the bacilli remain alive, and no matter what is done for the child he may still fall ill in the teens or at any subsequent time in life. The great destruction from tuberculosis apparently has always occurred in adult life in both animals and man. It appears in any decade, including senility, and here is where tuberculosis must be fought in order to prevent adults from infecting other adults as well as children. Where attempts have been made to protect children against infection, remarkable results have followed. For example, in one state between 1915 and 1933 the mortality among infants under 1 year of age was decreased 88 per cent. To eliminate infections and deaths among infants completely, it is only a matter of creating an environment free from contagious cases of tuberculosis into which the infant is born and reared. This is being done with great success in several parts of the world by examining expectant mothers for tuberculosis. Where examinations of large groups of such women who appear well have been made, from 1 to 1.5 per cent have been found to have clinical pulmonary disease. Other members of the household, nurses, physicians and friends must be examined, and if any case of tuberculosis is found, adequate treatment or isolation will insure protection for the infant. This should be applied to all the years of human life.

To remove every person with tuberculosis to a sanatorium or hospital would not suffice, if we allowed tuberculosis to exist among our animals. Cats, dogs and other pets may have tuberculosis and transmit it to the persons with whom they are associated; therefore, such animals should be carefully examined by veterinarians before they are brought into the home and examined periodically thereafter. Because man is so dependent on cattle for his food supply, tuberculosis among cattle is a potent source of disease among human beings. When the bovine tubercle bacillus is taken into the human body, it sets up infection which at first is manifested only by a tuberculin reaction; but as time passes, these bacilli may produce disease which is identical with that caused by the human type of tubercle bacillus.

In Massachusetts, a study of 200 cases of tuberculosis, other than pulmonary infections, in all age periods revealed that 27.5 per cent were due to the bovine type of bacillus. Apparently, wherever tuberculosis is a serious problem in cattle, the bovine type of bacillus creates a serious problem in man. In England this type of bacillus accounts for more than 50 per cent of the cases of tuberculosis of the lymph nodes of the neck (scrofula), 50 per cent of the skin tuberculosis, 25 per cent of the tuberculous meningitis and 20 per cent of the cases of tuberculosis of the bones and joints. In Denmark 5 per cent of a large group of patients had pulmonary tuberculosis caused by the bovine type; in Holland 6.4 per cent.

In the United States, the veterinarians and their allies have been so successful in eradicating tuberculosis that only five counties in the entire nation have tuberculosis in more than one half of 1 per cent of their cattle. Never in all the history of man has there been such a colossal demonstration of tuberculosis control. Although the tuberculin reactors among the cattle herds of this country have been reduced to 0.4 of 1 per cent, the veterinarians have not slackened their efforts nor do they consider that their campaign against the disease will be successfully ended as long as a single animal in the nation is infected with tubercle bacilli. Not only has the work of the veterinarians almost solved an economic problem that was costing this country $30,000,000 a year, but they have done much to solve the problem of tuberculosis in man, since along with the eradication of the disease from the cattle herds, there has been a sharp tumbling of the number of tuberculous infections. This is indicated by the fewer positive results of the tuberculin test in man, a marked decrease in the number ill and in the number of deaths from this disease.

Thus, through isolation in sanatoriums and hospitals of human beings with contagious tuberculosis and the treatment of large numbers of others—so that contagious cases became noncontagious and early cases never became contagious—together with almost complete eradication of tuberculosis in the cattle herds, the tuberculosis outlook for the future is definitely encouraging.

Obviously, if every person and animal with contagious tuberculosis were isolated and treated so as to prevent the spread of tubercle bacilli to others, the disease would quickly be controlled; subsequent generations of children would live through the span of life without contact with tuberculosis. In fact, this is the ultimate goal of the veterinary and medical professions and their allies. Indeed, much is already being accomplished in this direction. In one county, where tuberculosis was at one time a serious problem, but where for fifteen years vigorous attempts have been made to protect the uninfected from tubercle bacilli, only 5.2 per cent of the entire population of school children, including high school, are now infected.

In the midwestern part of the United States, only about 1 per cent

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of the children become infected each year. Thus, at the age of 10 years only approximately 10 per cent react to the tuberculin test. Among colleges and universities of this country 82,744 students were tested during 1938-1939, of whom 25.5 per cent reacted positively.

It is probable that forty years ago nearly 100 per cent of the young adults were infected with tubercle bacilli. Thus, we are now definitely reducing the potentialities of illness by preventing infection of children and young adults; with 10 to 15 per cent of the children infected today, in contrast to 90 per cent or more of those of forty years ago, the chances of illness from tuberculosis during the lives of the present children are many times less than among those of forty years ago.

Just now we are reaping a harvest of tuberculosis from tubercle bacilli which were sown in infant years in persons now in or past middle life. Almost nothing was done then to protect them against either the human or the bovine type of tubercle bacilli. Indeed, it has been observed already in some sanatoriums that there is a relative increase in the number of persons admitted at 40 years of age or older.

With the reduction in the number of younger persons infected, there is a similar reduction in the number who are ill from tuberculosis. In one state where fifteen years ago there was a clamor for more facilities for tuberculous patients, there is today a large number of vacant beds. There is also a corresponding reduction in the number of deaths from tuberculosis. In 1904, for every hundred thousand of our population, 202 died from it; in 1938 this figure had been reduced to forty-nine per hundred thousand. The number of deaths from tuberculosis or the number ill from this disease is not the best index of the problem. It is the number infected, as manifested by the tuberculin test, that constitutes our best criterion. As long as a single person reacts to the tuberculin test in a community, there exists a tuberculosis problem. But with continued effort, tuberculosis will take no more lives than are now taken by such diseases as diphtheria and typhoid, which were both at one time deadly killers but are now relegated to the limbo of conquered diseases.

VITAMIN B_1 DEFICIENCY, NOT ALCOHOL, CAUSES DELIRIUM TREMENS

What is believed to be proof that vitamin B_1 deficiency, and not the alcohol consumed by addicts, is responsible for delirium tremens is offered by Hugh E. Kiene, Robert J. Streitwieser and Himon Miller, Providence, R. I., in *The Journal* of the American Medical Association.

They base their belief on the results they obtained in controlled investigations of ten patients with delirium tremens who, on admission to the hospital, had vivid hallucinations brought about by overindulgence in alcohol, with histories of recurrent intemperance and generalized tremor. Five of these patients were given various amounts of vitamin B_1 by injection into the vein, four ounces of whisky every three hours and diets containing the normal requirement of the vitamin. The other five addicts received no whisky or vitamin B_1 by vein but were given the same diet so that ordinary requirements of the vitamin were assured.

The average recovery time for the addicts treated with vitamin B_1, even though they were being given whisky at the same time, was only 2.4 days. For the control patients, an average of 4.2 days elapsed before recovery took place.

Alcohol in small amounts may cause an increase in appetite, but when it is taken in large quantities over a prolonged period the appetite is lost, the authors say. This lack or loss of appetite results in a relative food loss with attending vitamin B_1 deficiency and later may result in neuronitis [inflammation of nerve cells].

VISIBLE PULSATIONS OF ARTERIES IN THE EYES

The belief that visible pulsations of the arteries of the perceiving portions of the eyes are always indicative of disease is erroneous, John E. L. Keyes, Cleveland, and William F. Hatcher, Youngstown, Ohio, maintain in *The Journal* of the American Medical Association.

QUESTIONS AND *Answers*

Modern Beauty Shop Magazine

In producing a permanent wave in straight hair, it must first be softened by an alkaline solution. The hair is then wound on curlers and heated for a short time.

Permanent Waving

To the Editor:—Is the hair injured to any great extent in permanent waving?

A. K., Indiana.

Answer.—The principle used in producing a permanent wave of straight hair is roughly as follows:

The hair must be softened by the use of some alkaline solution, such as sodium carbonate, borax and ammonia water. The softened hairs are wound on curlers and heated sufficiently to steam the softening fluid. The hairs are then cooled and manipulated to effect the degree and type of curl desired.

Dyed hair, white hair, stringy hair and overbleached hair are difficult to permanent wave successfully. The question as to the injury of the hair depends on the permanent wave lotion used, the skill and experience of the operator and the particular type of hair. No general statement can be made.

Muscular Development

To the Editor:—Is there a limit to muscular development? At what age does muscular development stop?

J. K., New York.

Answer.—The mysterious action of the glands of internal secretion (endocrines) seems to determine the size, growth and development of the individual. These glands not only regulate and promote activity of the body and its functions but also inhibit or entirely check growth after a certain period of development is reached. The difference between the giant and the dwarf in one case depends on the excessive activity of the glands and in the other on their reduced activity. There is much that we understand about the action of the endocrines, but much also remains to be discovered.

Exercise develops muscular tissue because of the increase of circulation caused by vigorous use of the muscle. Thus a greater blood supply is brought about, and more nutritive material is made available for growth. However, through the action of the endocrines, nature seems to have set a limit to all growth and development. Just when this limit is reached, one cannot say. There are many factors to be considered, such as good health, nutrition and the age of the individual.

Muscles accommodate themselves in great measure to the demand made on them. "Function makes structure." It is possible for persons past middle life to develop muscle by judicious and regular exercise, provided their general nutrition and health is good. Development, however, is produced more slowly than in young persons. One is not able to say at what age muscular development stops. Necessarily the period is variable and depends on the general health and habits of the individual. All bodily processes slow down with advancing years, and a general wasting of tissues takes place.

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Vision of Third Dimension

To the Editor:—In normal vision, does the use of binocular vision entail only the third dimension of breadth? In other words, is it true that the length of an object will appear the same with the use of one eye as with the use of both eyes? Similarly, does a one-eyed person see an object the same length as a person having the use of both eyes?

D. G., New York.

Answer.—Binocular vision in normal eyes gives a quality of depth perception. Length or size of objects is normally not altered with either monocular or binocular vision, although better judgment of distance is offered with binocular usage. The question asked deals more specifically with a condition in which image size is not the same in the two eyes and may be influenced by the dominant eye, when a one-eyed comparison is made with binocular vision.

Syphilis Recurring

To the Editor:—Can syphilis be contracted again after completing the regular two year treatment and showing a negative Wassermann reaction?

L. K., Missouri.

Answer.—It is somewhat difficult to answer your letter without further information. It used to be considered that it was difficult actually to cure syphilis well enough so that it would be possible for the patient later to contract the disease again. However, in the past ten or fifteen years our ideas in regard to this have begun to change. If a person has contracted syphilis and is seen by a physician in the first few days after the appearance of the initial sore, the prospects of curing him are much greater. If such an individual is carefully treated and is conscientious in regular visits to the physician and does not at any time break the regularity of the treatment, the chances are that the patient may be cured within eighteen months or two years.

Often in early cases, the blood test will never show evidence of the syphilitic infection. This is what is known as a sero-negative primary infection, and many of these patients may never have a positive blood test. It seems that this particular type of individual may actually be cured, and therefore under certain circumstances may contract a new infection, if exposed to some one who has an acute form of the disease.

Fainting

To the Editor:—Could the amount of epinephrine in the system produced by an intense fear be a cause of fainting if it were released when one is smoking a cigaret? Cigarets have a small amount of epinephrine in them, which, when added to that normally produced by the body, might cause fainting. Is that true?

A. V. M., New Jersey.

Answer.—In order to understand the answer to this question, there must be some knowledge of anatomy and physiology. The heart is supplied with two pairs of nerves. One pair reaches the heart from the base of the brain along the two large arteries in the neck. Action of these nerves slows or stops the heart. The other pair of nerves reaches the heart from the spinal cord. The action of this pair of nerves increases the rate and strength of the heart beat. Both sets of nerves are influenced by intense emotional states, such as intense fear. Usually the intense emotions influence the accelerator nerves predominately, so that the heart is stimulated and the blood pressure raised. But occasionally the opposite can occur; that is, the inhibitory cardiac nerves are overstimulated, the heart is slowed or even stopped for a second or two, the blood pressure falls, and consciousness ceases because of the temporary anemia of the brain.

Epinephrine in the blood, when present in sufficient concentration, acts on the heart similarly to bring about the influence of the accelerator nerves. Instead of the heart being slowed or stopped, epinephrine increases the rate and the strength of the heart beat. This in turn may reflexly slow the heart action through stimulation of the sensory nerves in the heart and in the arteries by tension from the increased blood pressure. But rarely does this actually lead to sufficient slowing of the heart to induce fainting from anemia of the brain. It is well established that the output of epinephrine is somewhat increased in strong emotions, when it is due to the increased activity over the sympathetic nerves

that go to the medulla of the adrenal glands. But this increased output of epinephrine from the adrenal glands will ordinarily produce the opposite effects from fainting, namely, stimulate the heart and raise the blood pressure. Epinephrine is not normally a constituent of tobacco.

One of the poisons in cigaret smoke, carbon monoxide, has little or no effect on the heart in the concentration induced even by excessive cigaret smoking. But nicotine is known to increase the irritability of the heart, which might render the heart more susceptible to the action over both the inhibitory and the accelerator nerves. There is, however, great individual variations in the susceptibility of the human heart to the amount of nicotine absorbed into the blood of the cigaret smoker.

Thus it becomes apparent that the nervous, as well as the chemical, control of the heart is highly complex and that the added output of epinephrine in emotional states will tend to stimulate rather than to stop the heart.

Digestibility of Fried Food

To the Editor:—Why are fried foods regarded as hard to digest? Are foods fried in vegetable fat, margarine or cooking oils more easily digested than foods fried in animal fat?

How does the stomach take care of lard? Is it digested, or is it merely passed on? Has lard any food value?

E. M. C., Ohio.

Answer.—Fried foods are considered hard to digest because food thus cooked is usually coated or permeated with fat and has a soggy texture. The presence of a large amount of fat in food slows down the emptying of the stomach and the digestion of foods. The kind of fat, that is, vegetable, animal or a mixture of vegetable and animal fat such as represented by oleomargarine, makes little difference in the digestibility of the food cooked in fat. It is rather a matter of skill used in cooking that determines the digestibility of food. If foods are properly fried in hot fat, they do not absorb much fat during the cooking process. They will have a crisp coating of a highly pleasing flavor and may be eaten in moderate amounts without harm. On the other hand, foods cooked for a long period of time in less hot fat will become greasy throughout and of soggy texture due to absorbed fat. Such foods are difficult to digest. If the frying fat is heated to too high a temperature, it will break into decomposition products which are quite irritating to the alimentary tract. Hence, it is apparent that fried foods must be cooked with special skill.

Lard is an animal fat derived from hogs. Lard, like any other fat, is subjected to the same digestive process. These processes are emulsification into fatty acids and glycerol and absorption of the glycerol and fatty acids by the lymphatic system. Lard has the value of 256 calories an ounce. It contains no vitamins and is chiefly used for flavoring foods.

American Indians and Flat Feet

To the Editor:—A recent medical examination disclosed that I have been developing a flat foot, perhaps because I have been wearing low heeled, crepe soled shoes for the past year.

American Indians are credited with having been famous for their foot hygiene, and yet they wore moccasins. In what way did their wearing of moccasins differ from our wearing of low heeled, crepe soled shoes?

Is orthopedic treatment corrective after the muscles have once broken down, or is the treatment simply to prevent further damage?

W. C., New York.

Answer.—American Indians and other natives had good foot hygiene and wore moccasins, but they lived on soft ground and outdoors. Their constant daily exercise kept their muscles up to normal. The soft ground is much kinder to feet than hard city pavements. Persons with highly arched feet who lead sedentary lives and then begin to walk and stand on hard surfaces get footstrain.

Orthopedic treatment puts the foot at rest by using some device in the shoe to make the shoe fit the foot. The heels of the shoe have to be adjusted to allow for shortness of the heel cord. The muscles become weakened through disuse. After pain has disappeared from the feet, exercises are prescribed to bring the muscles back to normal.

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Patients are encouraged to take more general exercise, which is just as important as local exercise. This should be done, however, only after pain has disappeared. To exercise on uncomfortable feet is bad, as it simply increases the pain.

People who have short heel cords and whose arches are a little higher than normal in the resting position often begin to have foot trouble when they change to flat heeled shoes. Patients with acute foot-strain may have a flat foot or some other condition. If the foot is flat in the resting position, an abnormal condition may be present.

Marriage of Patients Treated with Insulin Shock Therapy

To the Editor:—What is the opinion of physicians concerning marriage of persons cured of their mental state by means of metrazol or insulin "shock" therapy?

J. L., Massachusetts.

Answer.—An answer to this question must take into account the fact that each patient with a mental disorder is a special case. It is more difficult to apply set rules here than it is, let us say, in connection with appendicitis or childbirth. In each case of the types of mental disorder usually subjected to shock treatment, the combination of causes vary greatly, and consequently the plans for any recovered patient have to be made in such a way that the conditions tending to produce his breakdown can be avoided or neutralized. It is, therefore, the responsibility of the physician who has studied the patient to weigh the evidence and to help the patient to make his plans.

If the sexual adjustment of the patient is likely to be disturbed by marriage, or if the responsibilities incumbent on a wife or a husband constitute a threat to the stability of the patient, as evidenced by the effect of these responsibilities in the past, the physician is likely to advise against them until the prospects improve or until safe conditions can be found.

Crib Rocking

To the Editor:—I have a 19 month old baby girl who, since she was 3 weeks old, has developed the habit of rocking to and fro in her crib. She gets up on hands and knees and rocks that crib violently. I am afraid she may harm herself. Is it advisable that I give her a sleeping powder at rest periods for about a week? Is it a form of masturbation?

G. V., New York.

Answer.—The type of rocking that this 19 month old baby indulges in is by no means uncommon. But in the many cases recorded, it has no serious significance, nor does it mean any mental disturbance. It is not a form of masturbation but is apparently a habit involving repetition of rhythmic motion. She will in all probability ultimately stop it. Possibly one way to remedy it would be to let her sit up in a chair much of the time so that she will not be in a position to do the rocking. Since the child has not been examined, we can express no opinion about the sedative, but probably it would not do any good. Excessive crib rocking has no serious significance.

Pedograph

To the Editor:—Of what diagnostic value is the pedograph?

S. L. A., Ohio.

Answer.—A pedograph, or imprint of the sole of the weight-bearing foot, has a definite diagnostic value if properly made and correctly interpreted. To make a pedograph properly, the foot must be placed on an ink pad and then an imprint made on a suitable piece of paper with the person bearing his weight firmly on the foot. This imprint will show all the area of the foot which is in contact with the weight-bearing surface and so indicate how much of the sole of the foot is taking part in supporting the body weight.

As a diagnostic instrument, a properly made pedograph will give information as to the height of the long arch of the foot, that is, whether it is normal in height, depressed or flat or unduly high. If the arch of the foot is normal or essentially so, the pedograph will show an imprint of the toes, the ball and the heel and, in addition, a narrow band, about one third of the width of the foot, connecting the ball and the heel on the outer side of the foot. If the arch is depressed or flat, the imprint will show the entire sole of the foot; in other words, the narrow section between the ball and the heel will have expanded to the entire width of the foot, indicating that most of the sole of the foot, including the arch, is in contact with the weight-bearing surface. If the arch is unduly high, the imprint will show the toes, the ball and the heel with no connection or only a mere trace of a connection between the ball and the heel, indicating that the arch is so high that none of it comes in contact with the weight-bearing surface.

The information supplied by a pedograph must be supplemented by additional facts as found in an examination of the foot, before the foot's efficiency as an organ can be clearly evaluated.

The chief value of the pedograph probably lies in the fact that it may be used as a record of the condition of an individual's foot at a given time and that this record may be preserved for comparison with pedographs taken at later dates to determine what changes are occurring in the foot. A pedograph is a useful but not an essential part of the records of a department of physical education.

Mastoid Operations

To the Editor:—What is the difference between a simple and a radical mastoid operation? Is the ultraviolet lamp treatment beneficial to a chronic draining mastoid infection?

P. B., New York.

Answer.—A simple mastoid operation consists of the opening and cleaning out of the mastoid cells after exposing the operative field. The mastoid cavity is then packed and drain inserted, following which the wound is closed and a dressing applied.

A radical mastoid operation consists first of the completion of a simple mastoid operation and second the taking down of the bony canal wall which separates the middle ear proper from the mastoid cavity, thus making the two cavities one. Further steps necessary are to remove certain ridges, infected ossicles, infected cells about the eustachian tubes, attempting to close the latter and finally making

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If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

a flap of the membranous canal and packing the cavity.

Ultraviolet lamp treatment is beneficial to a chronic, draining mastoid infection because of the improved nutrition, circulation, oxidation and probably certain effects due to vitamin-mineral mobilization, all of which aid in restoration to the normal.

Perspiration and Rusting of Steel in Industry

To the Editor:—Last summer we experienced more rusting of material in manufacture than in the year previous.

That was also the first summer salt tablets were dispensed in our departments to replenish salt in the systems of our employees due to losses by perspiration, and I am wondering whether the use of salt tablets might have had a tendency to increase the salt content of perspiration so that when the employee handled the steel these sweat marks caused it to rust.

Would it be possible to increase the salt content of the air by tablets being dropped to the floor and crushed?

M. J., Illinois.

Answer.—Taking salt by mouth in ordinary quantities has little or no effect on the amount that appears in the sweat. If last summer the rusting was worse than usual, it was doubtless due to weather conditions rather than the practice of eating salt. If more salt is taken than actually needed for maintenance, the extra amount is eliminated in the urine rather than in the perspiration.

The amount of salt in sweat is extremely slight, usually less than 0.5 per cent. The output probably depends on the salt concentration in the blood. The regulation of the salt concentration in the blood is extraordinarily exact; even a slight excess is met by a corrective discharge through the kidneys. The blood which is supplied to the sweat glands, therefore, has no higher concentration of salt in persons who take salt in abundance than in persons who take a moderate amount. Workmen who perspire excessively for a long period may have a diminished salt content of the blood unless, by taking in an extra supply in drink or food, they compensate for this loss. Salt tablets which are provided such workmen merely serve to prevent

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deficiency or to bring the concentration back to normal.

Dropping salt on the floor and otherwise spreading it around may be much more serious, as far as rusting is concerned, but difficult to evaluate. As a matter of fact, in the handling of the salt tablets significant amounts are likely to be left on the fingers or clothes and later come in contact with the steel in this way and thus increase the rust formation.

Salt is not volatile, so the presence of the salt containers could not affect the amount of salt in the atmosphere. However, a high humidity may aid in spreading around and distributing more widely such salt as is in the room. Our quantitative tests for salt in body fluids would be of no use, if salt were readily volatile. Acid fumes or smoke in air may strongly affect the amount of rust produced, of course.

The taking of salt tablets by the men is of much greater value than the slight possible influence that this procedure may have had on the increased rusting noted last summer. The salt probably only affects the rusting if it is carried on the fingers or clothes of the men to the steel, and not in any other way.

Size of Cornea and Eyesight

To the Editor:—I would like to know whether a large cornea is indicative of good or excellent eyesight and, conversely, whether the smaller cornea indicates the poorer eyesight.

E. M., New York.

Answer.—The size of the cornea has no direct relationship to the excellence of the eyesight. Visual acuity is for the most part dependent on the length of the eyeball and the ability to focus light rays on the sensitive retina of the eye. The size of the cornea may be influenced in its appearance by the width of the opening of the lids. If the lids are wide apart, the cornea appears apparently larger than when the lids are not so wide. An extremely large cornea is an abnormal condition due to overgrowth factors, and in the majority of these eyes, because of the disturbance in the entire makeup of the eye, the vision is usually below normal; likewise, there are eyes whose corneas are small, a condition often accompanied by poor vision.

LETTERS FROM READERS (Continued from page 580)

Statistics of the United States—1937." There is no fundamental disagreement, I find, between Freling Foster's statement and my own. My statement was that "unmarried" persons have the higher rate; his was that *among adults,* the married have the higher rate. Both statements are correct, due largely to the two facts: (1) that I was talking about rates throughout the entire world (see the immediately preceding paragraph of my article), and (2) I included all people—not adults only. In other parts of the world, particularly the Orient, the rate for adolescents and other unmarried persons is higher than here. It is also quite likely that Mr. Foster did not include relicts as unmarried, which I did—and which, incidentally, I should have explained to my readers.

Now as to the inquiry concerning the rates among clergymen and liquor dealers: I find in my files here no better evidence (though I have found these facts cited in various tabulations) than a letter apparently in answer to some inquiry I made while gathering my data. It fully confirms my statement; it is from the Bureau of Information in Washington, D. C., and signed by Frederic J. Haskin, Director.

Frederick L. Hoffman's "Suicide Problems" was published by the Prudential Press, Newark, in 1928: see page 17. Any one interested in these particular problems in suicide should also see Adolph Dominic Frenay's "The Suicide Problem of the United States." Richard T. Badger, Publisher. The Gotham Press, 1927.

I believe this answers the questions raised by the correspondent who wrote you. Thank you for giving me a chance to clear these points.

DOUGLAS E. LAWSON
Carbondale, Ill.

Use of the X-Rays by Dentists

To the Editor:

This is to call attention to your answer, on page 63, of "Answers to Public Health Questions" [a booklet

published by HYGEIA]. In this it is stated, speaking of the x-ray:

"It needs to be used only by the most skilful and thoroughly trained persons, never by any one other than a physician or a trained technician under the immediate and constant direction of a physician."

An x-ray machine is part of the equipment of the modern dental office. Dentists make a great many exposures—often from ten to fourteen for a full mouth examination of one patient.

Your booklet was received with a HYGEIA subscription, the idea being, it seems, that it be placed on the waiting room table. However, with this answer as it is, it would tend to make some patients apprehensive and be embarrassing to the dentist.

I am sure this is simply an oversight on your part and that you will see the matter from the dental point of view. THOMAS P. REGAN, D.D.S.
Helena, Mont.

» *In the warning against the use of x-rays by unskilled persons,* HYGEIA *had in mind cultists, quacks or inadequately trained individuals. A Doctor of Dentistry qualified to use the x-ray is, of course, not included in the groups against which* HYGEIA *was giving warning.*

"Photographer in Bed"

To the Editor:

I want to thank Mr. L. T. Carpenter for his article "Photographer in Bed," in your issue of May 1940. He has given me a swell idea, and I hope I get as much pleasure out of it as he did, as evidenced by the pleasure and humor he put into the telling of his experiences.

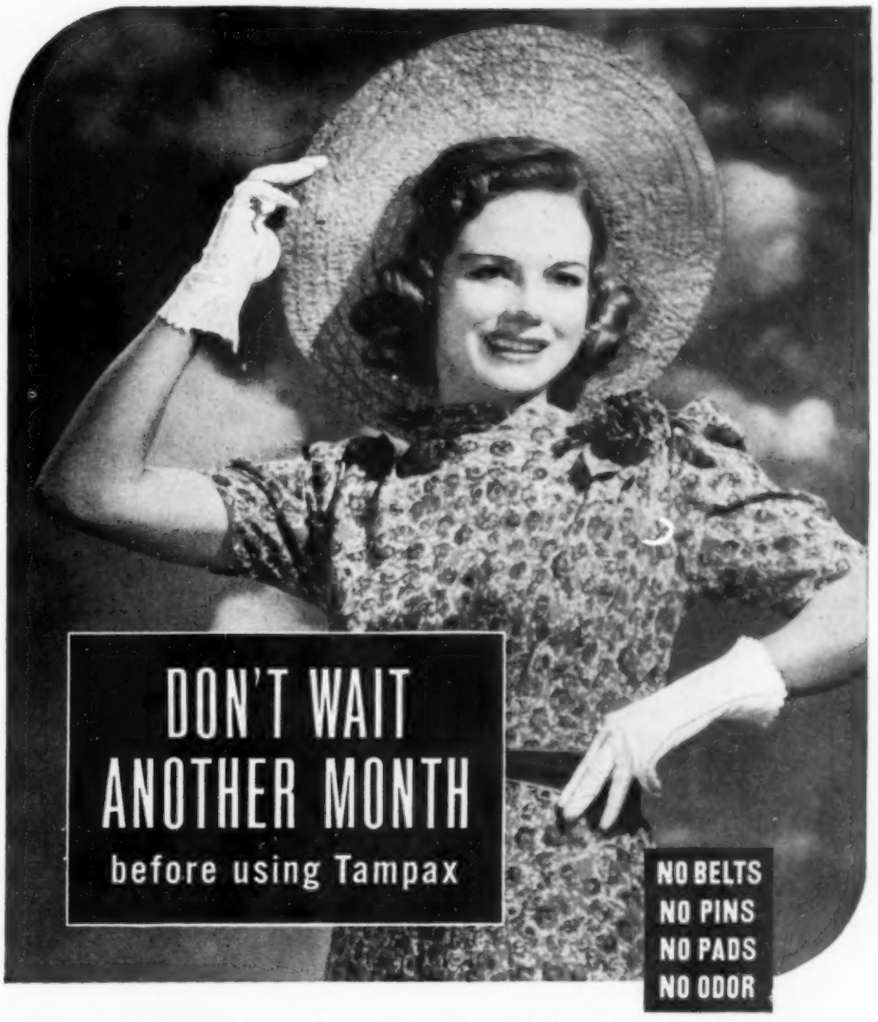
I am sending out for my "shoe box" right away.

SAMUEL JAY DONNELL
Wallingford, Conn.

To the Editor:

We were very much interested in the article appearing in the May number of HYGEIA entitled "Photographer in Bed," by Lansing T. Carpenter. In addition to the interest to us as a photographic concern, the cheerful atmosphere that the article conveys seems to us to make the article of special value to those of your readers who may be handicapped, and to whom an outside interest would be of value.

L. A. LOOMIS
Eastman Kodak Company
Rochester, N. Y.



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ADVICE for the DIABETIC (Continued from page 626)

each meal, as it is most likely to contain sugar at this time, and he therefore "learns the worst." Occasionally it is of advantage to test the fasting specimen before breakfast.

Mild cases can often be controlled by dietary regulation alone, and this was the only method in the pre-insulin era. Insulin will be required in those cases in which a trial of dietary regulation has failed to control the sugar and those in which high blood sugar reactions have been severe at the outset. In some of these the insulin can subsequently be greatly reduced and even discontinued. But once a diabetic, always a diabetic; and dietary regulation and urine tests must not be abandoned. The dosage is an individual problem which only the attending physician can solve. But it can be administered only by a hypodermic injection, and any substance which is advertised as being effective by mouth should be considered fraudulent until proved otherwise by competent medical authority. From 1922 to 1936 only one type of insulin was available. This was given about a half hour before each meal; it acted promptly in controlling the rise of blood sugar induced by the ensuing meal and largely spent its effect by the time the next meal was served. Consequently, it usually had to be given before each meal. Since 1936 there has also been available a slower acting substance called protamine zinc insulin. Its action is so prolonged that a dose given before breakfast one day will still have some effect the following morning. Sometimes it can be used alone; sometimes it is used in conjunction with the old type of insulin, both injections being given only once during the twenty-four hours. The selection of the proper type of insulin must be decided on the merits of the individual case and is not suitable for discussion in an article such as this.

Both types of insulin, however, have a serious drawback which must be properly appreciated. Infection, lack of exercise or exceeding the diet will cause the diabetic to spill sugar. If this situation is allowed to persist, the patient's ability to use sugar will be further impaired, and acidosis and coma may follow. This is a gradual process, amply heralded by urine tests showing increasing amounts of sugar and ketone bodies.

The converse of diabetic coma is an insulin reaction; it likewise is manifested by unconsciousness when full blown. The mechanism itself is entirely different, however. The blood sugar is reduced below the lower limits of normal under certain conditions: when too much insulin is given, when the prospective meal does not follow the rapid-acting insulin within the proper time interval or when it is inadequate in amount and when the patient burns up a lot of sugar by strenuous exercise. The patient may suddenly experience a vague feeling of uneasiness or nervousness sometimes associated with impaired vision. Impairment of judgment and powers of concentration is not uncommon, and transient personality changes may take place. If orange juice or a lump of sugar is taken at this point, the falling blood sugar is restored to normal and the symptoms disappear. Otherwise they may progress through sensations of hunger and extreme weakness to the point of convulsions and loss of consciousness. When this point has been reached, the prompt administration of sugar solutions directly into a vein is imperative. Accordingly, every diabetic person on a program of insulin should always carry a few lumps of sugar in his pocket or her handbag and an identification card bearing the warning: "INSULIN REACTION OR DIABETIC COMA, WHICH? I AM A DIABETIC PATIENT TAKING INSULIN." This will warn a strange medical attendant not to give insulin without doing a blood sugar test and will lessen the chance of the police wasting precious time on a charge of intoxication, instead of taking the patient to the hospital. When in doubt, give sugar. If it is diabetic coma requiring more insulin, it won't kill the patient before a correct diagnosis can be made. If it is an insulin reaction, it may save the patient's life. Coma is gradual; reactions are sudden and swift.

Before the insulin era most diabetics of the child-bearing age were sterile, and few child diabetics lived more than a year or two. Nowadays adult diabetics live out their normal span of life, and young diabetics bid fair to do so. Diabetic women give birth to normal children, albeit they must be considered potential diabetic patients. For some decades to come, therefore, it seems probable that the total number of diabetics in the world will increase, since the existing ones are living longer, and more potential diabetics are being born of diabetic parents who would have been sterile prior to 1922. What the ultimate effect on the human race will be is difficult to predict. It is to be hoped that the progress of medicine may teach us to prevent or cure the disease. In the meantime, it has enabled the diabetics, young and old, to lead normal, happy, productive lives, if only they will exercise intelligence and self restraint. Good nutrition, a sense of well-being, a sugar-free urine and the avoidance of insulin reactions are the reward. Failures are penalized severely and inexorably; the diabetic who cheats, cheats only himself.

TREATMENT FOR TYPHOID CARRIERS

What may prove to be a solution to the problem of effectively treating typhoid and paratyphoid A carriers is reported by William Saphir and Katharine M. Howell, Chicago, in *The Journal* of the American Medical Association.

In spite of many attempts to free the carriers from the typhoid and paratyphoid A bacteria, there has been no known method which will accomplish this task with a reasonable degree of success, the two authors point out. In view of the futility of drug treatment there has been an increasing tendency in recent years to remove the gallbladder from such carriers. This has effected a cure in 75 per cent of the cases, when the gallbladder was found to be the site of infection.

The authors report that the administration of a dye by mouth to a paratyphoid A carrier was followed by immediate disappearance of the bacilli and that repeated examinations over a seven months' observation period remained consistently negative for these organisms. Paratyphoid A infection is closely related to typhoid infection; whereas paratyphoid B is generally associated with food poisoning.

BOOKS ON HEALTH

Frontier Doctor

By Urling C. Coe, M.D. Cloth. Price, $2.50. Pp. 264. New York: The Macmillan Company, 1940.

This is a story of medical practice in the old West. Dr. Coe went to Bend, Ore., in the days before the railroad, when men and horses were wild and six shooters were part of the well-dressed man's costume. His story in spots is as wild as the frontier, particularly in his adherence to the actual language of some of his patients. A reviewer like myself who has spent some time in similar country in southwestern Idaho, though at a later date, readily appreciates the correctness of the picture which Dr. Coe portrays of primitive western country and medical practice among an unschooled, hardy, pioneering people. "Frontier Doctor" tells of the encroachment of civilization on the pioneer wilderness. For those who have never known the West or those who would like to be taken back to it, this book is an interesting bit of reading. It contains, incidentally, some wholesome observations about independent medicine versus medicine in the so-called planned economy.

W. W. Bauer, M.D.

Pioneers of Plenty

By Christy Borth. Cloth. Price, $3. Pp. 303. Illustrated. Indianapolis: The Bobbs-Merrill Company, 1939.

Chemurgy is a new word which made its first appearance in print in 1934 and is found only in the latest dictionaries. It was coined by Dr. William Jay Hale, an organic chemist, from the word "chemistry" and the Greek term, "ergon," for work. Thus it means "chemistry at work." Borth's book is the story of chemurgy, a movement aimed at a wider utilization of the nation's natural resources, especially farm products, through the process of chemical manufacturing, with particular emphasis on farm products. He tells how clothing is being made from cottage cheese, roads from cotton, automobile parts from soybeans, dyes from peanuts, building materials from sawdust and how chemistry is aiding in medicine's battles against disease. His is the story of the leaders in the movement, mentioning such figures as the late Charles Holmes Herty, who pioneered in the conversion of southern slash pine into newsprint; Leo Hendrik Baekeland and his work with plastics; George Washington Carver, the Negro scientist, and his accomplishments with peanuts; Henry Ford and his soybeans, and Perrin H. Long and the late Francis P. Garvin and their work in chemical aids for medicine, particularly the former's role in the development of sulfanilamide, the dye which has become the wonder drug of the age. Borth and the leaders in the chemurgy movement may be unduly optimistic about the role chemical manufacturing will play in the economic future of the country, but things no more strange than those predicted by them have come to pass in the last twenty years. At any event, the cheerful outlook depicted by Borth is in refreshing contrast with the direful forebodings of the present international scene.

L. C. Salter.

Little Technical Library

Ten volumes. Illustrated. Price, 50 cents each. Chicago: Ziff-Davis Publishing Company, 1939.

This series of ten small volumes has been published for the benefit of the novice in photography. The

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NAIL BITING

particular branch of physics known as optics, or the study of light, is a difficult one. The optical laws on which photography is based are exact mathematical expressions. Unless one is content to express his photographic instinct in the occasional snapshot, it is desirable that the fundamental mechanisms underlying the taking of pictures be understood. The most important of the photographic tools is the camera, and the title of the first booklet is "Your Camera and How It Works." The advantages and uses of some of the more common lenses are discussed, together with a brief history of their development and improvement. The lens of the camera, as the authors explain, can be an intricate or a simple device. The amateur photographer without knowledge of optics will find a lucid description of lenses which will not involve him in a maze of mathematics. Other problems which perplex the beginner, such as the type and function of the shutter, view finders, rangefinders and other devices on the various cameras are aired with considerable clarity. Of the entire series this is the most important and valuable and most likely to get the beginner off to a good start in photography.

The second volume is a simple exposition on developing and printing and will prove almost as valuable as the first. The remainder of the volumes are more specialized and deal with particular phases of photography. Filters, composition, movie making, color photography, child photography and portraiture and makeup are other titles. The volume on color photography by Dmitri is excellent and contains some beautiful color photographs. The difficult subject of photographic composition is capably discussed by Heilbron. The last two volumes are concerned with handy hints and a glossary which provides thorough and satisfactory definitions of various photographic terms.

Because these books are written by a number of authors, some duplication in material occurs; but this is often advantageous, since it illustrates how these problems are met by different experts. Those who are new to photography will find these little books of special interest and value.

MORRIS T. FRIEDELL.

State Regulation of Safety Education in the United States

Driver Education and Training Manual for High School Teachers

Paper. Price, 10 cents. Pp. 33. Illustrated. Chicago: American Automobile Association, 1940.

Paper. Price, 25 cents. Pp. 136. Illustrated. Chicago: American Automobile Association, 1940.

The American Automobile Association has just made available two booklets which should be of great use in helping to bring about a decreased number of accidents in the United States in the coming years.

The first of these, entitled, "State Regulation of Safety Education in the United States," defines the present status of laws regarding the teaching of safety in the various states, the courses of study available in the various schools and the extent to which training of teachers in safety is a practice. It becomes quickly apparent from a survey of this book that most of our states are far behind in their requirements in this regard—obviously a sad situation in view of the fact that accidents are now high in the list of the causes of death.

The second pamphlet, entitled, "Driver Education and Training Manual for High School Teachers," is prepared especially to aid teachers in the instruction of their pupils regarding safe driving. The automobile has become so intimate a part of American life that such a course would seem to be almost a necessity for the modern high school student. The curriculum calls for a minimum of twenty clock hours of classroom instruction with a teacher interested in the work and possibly also some opportunity for road instruction with actual driving of dual controlled vehicles. The pamphlet includes a number of the best tests, refers to source material and presents even the economic relationships of the motor car to our civilization. So important has this study become that actually there are now devices to measure the extent to which drivers jerk the car in changing speeds.

MORRIS FISHBEIN, M.D.

The Way Life Begins

By Bertha C. Cady and Vernon M. Cady. Ed. 6. Paper. Price, 50 cents. Pp. 80. New York: American Social Hygiene Association, 1939.

Persons who are responsible for teaching sex are constantly on the lookout for material that will give

them an approach to the problem. There are those who feel that the use of comparisons with the animal and plant kingdom are outmoded and no longer of interest to today's children. Others feel that this approach is ideal as it affords children an opportunity to make comparisons between the human animal and other members of the plant and animal kingdom.

The fact that this book has gone through six printings, including the present revision, shows its popularity. It is well presented and interestingly written. The drawings, both in color and line, are excellent.

This book can be recommended to the parent or any other teacher who wishes to present sex information, using this manner of approach.

PAUL A. TESCHNER, M.D.

Young Chemists and Great Discoveries

By James Kendall, M.A., D.Sc. Cloth. Price, $2.75. Pp. 272. New York: D. Appleton-Century Company, 1940.

Elementary chemistry is so interesting and helpful to high school students studying physiology and hygiene that the teacher will be delighted with this readable book. It was written by a scholar who discovered with some surprise that most discoveries in chemistry were made by young men and women. In this readable volume he gives striking pen pictures of the lives of Humphrey Davy, Michael Faraday, Louis Pasteur and others. In keeping with the thought of the book the illustrations of his heroes and heroines represent them as young people. This is a book to be added to your school library.

J. MACE ANDRESS, PH.D.

NOTICE

Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through HYGEIA or the American Medical Association, unless published by this organization. The following list contains the complete addresses where the publishers mentioned in these reviews may be reached:

American Automobile Association, Pennsylvania Ave. at 17th St., Washington, D. C.

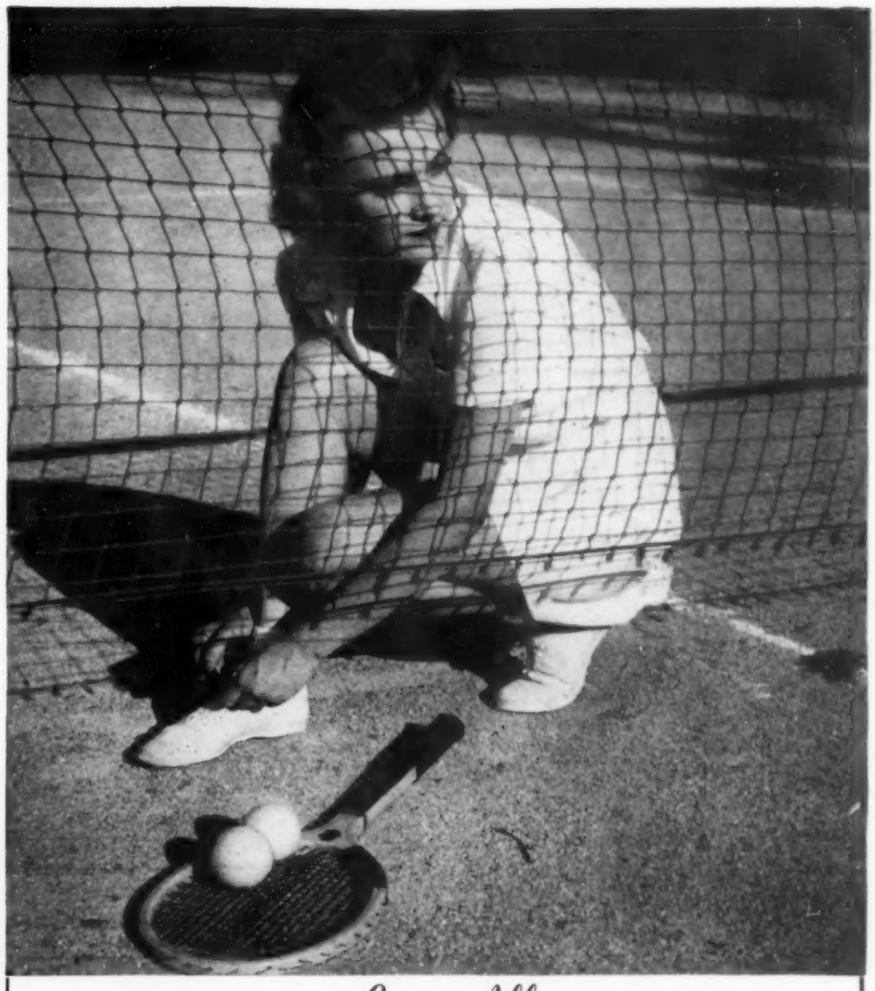
American Social Hygiene Association, 50 W. 50th St., New York City.

D. Appleton-Century Company, 35 W. 32nd St., New York City.

Bobbs-Merrill Company, Indianapolis.

The Macmillan Company, 60 Fifth Ave., New York City.

Ziff-Davis Publishing Company, 608 S. Dearborn St., Chicago.



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KANSAS CITY, MO.

The Baby Travels

By WILLIAM I. FISHBEIN

THE annual summer vacation is an institution usually participated in by every member of the family, including the baby. In fact, the infant may be the sole cause for a journey, particularly when there are doting grandparents, anxiously awaiting the first glimpse of their grandchild.

Just as the streamlined train, airplane and automobile have made traveling quick and comfortable for the adult, so also have modern ingenuity and inventiveness made traveling with the baby—once a dangerous undertaking—relatively safe and simple. The ideal, during traveling with the infant, is to maintain the same conditions throughout the journey as are ordinarily maintained in the home, with regard to the baby's feeding and care. On the other hand, certain incidents of the baby's routine may be temporarily interrupted as, for example, the baby's bath. The important points, however, are concerned with the infant's food, drinking water and sleep.

If the baby is breast fed, obviously, there is no difficulty concerning feeding; if the baby is receiving cow's milk, certain precautions are required. Bottles and nipples for the baby's milk mixture must be boiled and sterilized before the journey is started. If the journey is to be no longer than twenty-four hours, the milk mixture may be prepared at home and the bottles and nipples boiled before embarking on the trip.

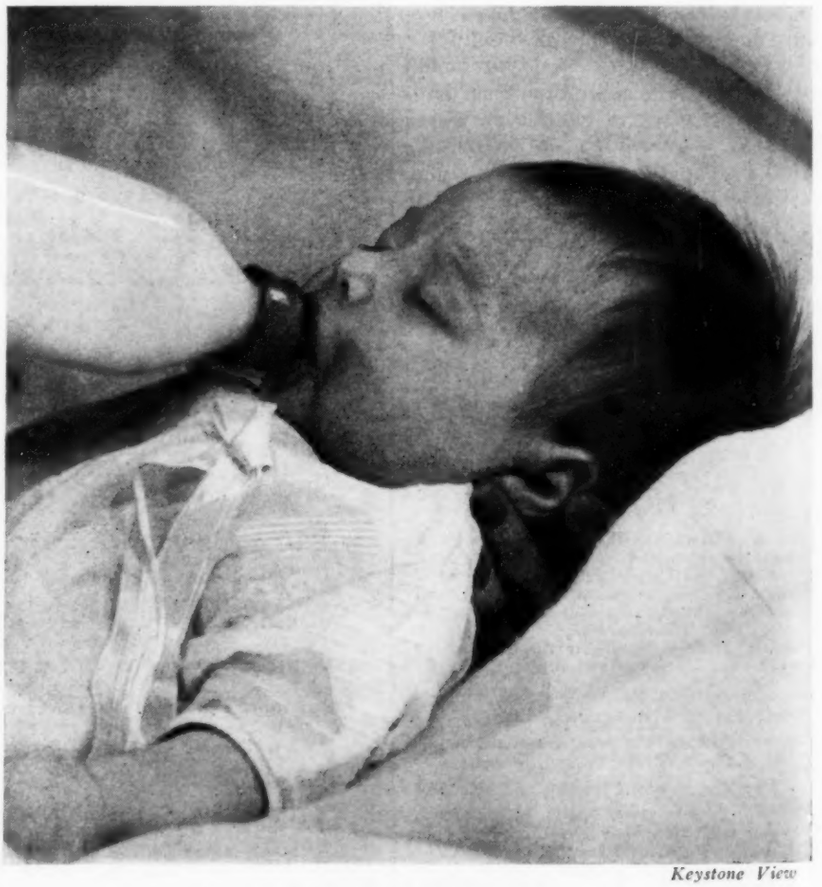
The nipples should be placed in a sterilized, covered container while the bottles, which have been capped, may merely be packed in a suitable box or traveling bag.

The milk mixture, after preparation, should be cooled and thoroughly chilled, and it may then be put into a vacuum bottle which has been washed out with hot water. Care must be taken, of course, that the water is not so hot that it cracks the bottle. The milk mixture must not be put in the vacuum bottle while it is warm, as by so doing, it will be kept at the temperature to permit germs to incubate and rapid souring of the milk to occur. The milk mixture from the vacuum bottle should not be used after twenty-four hours.

At each feeding time, a suitable amount of the milk mixture for the baby is poured into one of the sterilized bottles. Hot water is usually available for warming the milk mixture; and if not, a small alcohol stove may be taken along, over which a pan of water may easily be heated. If the journey is to be made on the train, separate bottles may be filled with the milk mixture and capped before the journey is started. The bottles should be kept on ice in the buffet car. If such refrigeration is not available, it is better to carry the milk mixture in a vacuum bottle.

With the rapidity of modern day traveling, train or airplane journeys of over twenty-four hours' duration are unusual. However, automobile trips which last two or three days or more are often taken. For such a trip, evaporated milk or dried milk is conveniently employed for the infant. A whole supply of canned milk may therefore be taken along. Of course it will always be necessary to boil the bottles and nipples each day. This often can be done at a hotel or tourist camp. It may be possible to prepare a whole day's supply of milk mixture at one time, as is done at home. The filled bottles of milk mixture can then be kept in a large vacuum jug in which ice has been put. These jugs will conveniently hold four bottles.

Dried or powdered milk is prepared by adding boiled water to



Keystone View

When the baby travels, the important points to consider are his food, drinking water and sleep. If the milk and water are boiled, no upset is apt to occur. A padded basket makes a good train bed.

it; boiled water is also added to the evaporated milk. Both of these types of milk usually require the addition of some sugar as well. Of course, the exact instructions for preparing the mixture should be obtained from the physician before leaving on the trip.

There are certain other foods which usually must be taken along for the infant. Orange juice is best if prepared fresh, but it may be squeezed out prior to leaving and put into nursing bottles which have been boiled; or, tomato juice in cans or jars may be substituted for the orange juice. Unless the weather is too warm, there is no need to keep the orange juice on ice.

Water for drinking purposes should also be boiled before leaving home and put into sterile nursing bottles. This will help to avoid making unnecessary stops during the trip and will assure the infant of a sufficient supply of safe drinking water. It is unwise to give the infant any water to drink concerning which there may be the slightest question of purity.

If the baby is more than 5 or 6 months of age, he usually is receiving cereal and vegetable feedings. Fortunately, both vegetables and cereals are available in cans or jars. These cereals have already been cooked. There are also cereals which are prepared for the baby merely by adding some of the warm feeding mixture.

A small suitcase may well be provided for carrying the utensils to be used for the baby's care. These utensils include the boiled nursing bottles and the jar containing the nipples; a funnel which has been boiled and wrapped in sterile gauze; the milk mixture in a vacuum bottle or the separate cans of evaporated or dried milk; the cans of vegetables and cereals; the bottle of orange juice; a boiled tablespoon and a teaspoon wrapped in gauze, and the alcohol stove, if one is to be used, together with a small pan.

Another important aspect of the baby's comfort during the journey is the provision of a proper sleeping place. A basket padded with a blanket or a small mattress, if available, is much more comfortable for the infant than being held in his mother's arms. The basket should be deep enough so that the baby will not roll out of it and should be carefully placed on the floor of

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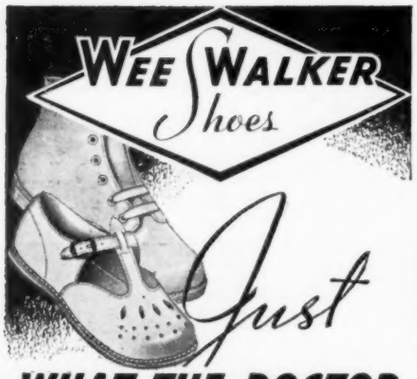

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the automobile so that it cannot tip over. A piece of mosquito netting, large enough to cover the basket, should be taken along. Even on a journey on the train, a basket will be found an ideal place for the baby. Special beds are available, much like the small cribs used in hospitals for infants, which can be conveniently suspended in an automobile. The infant may rest in the bed or basket during the entire journey, except for the feeding times.

The usual tub bath may not be possible each day during the trip. However, once daily the baby's skin can be sponged off with lukewarm water, after which the skin is patted dry. Care must be taken to avoid chilling. During the journey, in hot weather, the baby should be dressed lightly; a diaper, shirt and dress are usually sufficient. A sweater and a few extra blankets should be on hand, should the weather suddenly become cooler.

A rubber-lined bag or a small covered pail, for soiled diapers, should be on hand. Soft paper inner pads may be used in the diaper for convenience. An outer, triangular shaped, rubber diaper may be used to avoid soiling of the baby's clothing or bedding. Rubber pants are not satisfactory, since they may prevent evaporation of the moisture in the diaper and cause chafing and irritation to the skin.

Every effort should be made to keep constant the baby's habits of regular feeding, sleeping and bathing. The diapers should be changed as soon as they are soiled. The baby's face and hands may be washed several times a day to keep him cool and comfortable. To help avoid infections, the baby should be kept out of contact with strangers. Undue excitement and fatigue may lead to upsets; hence, it is better just to leave the baby alone, insofar as possible. He should not be given sweets, such as cakes or cookies, to quiet him. Several suitable toys will help to keep the baby quiet when he is awake.

When taking a vacation with the baby, many mothers fear that any change in the milk and drinking water will lead to some disturbances in the baby's digestion; but if the milk and water are boiled, no upset is apt to occur. With a little thought and advance preparation, a trip with the infant may be taken with complete safety.

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SHOCK TREATMENT FOR MENTAL DISORDERS

(Continued from page 627)

supervision necessary but is furnished free of charge to suitable state hospital patients.

Almost coincidentally with the development of insulin shock therapy, von Meduna of Budapest found that metrazol, a heart stimulant, produces convulsive seizures when given in large doses. He also discovered that when patients with dementia praecox are subjected to repeated seizures, they often improve or recover. Metrazol treatment is easier to give than insulin shock therapy, because the patients can be injected two or three times a week, develop their convulsive attack and recover within from half an hour to two hours, after which they need no special medical supervision. Also the death rate is extremely low. For this reason metrazol treatment was for a time more popular than insulin shock therapy. Now, however, it seems that more improvements and better recoveries are obtained by the latter treatment.

A course of metrazol treatment consists of from six to twelve shocks and thus may continue from a month to two months. Metrazol is especially useful in cases of long duration and in the more stuporous patients who have been sick only a short time, although in cases of short duration the immediate results are often as good as after insulin shock therapy. During the past year or more, it has become increasingly evident that metrazol shock therapy is an excellent treatment for the depressions of later life, in which it often produces recovery.

However, it is becoming more and more evident that metrazol must be used with great discretion and probably should produce not more than fifteen consecutive seizures. Examination of patients who have died some time after receiving treatment shows clearly that some damage is done to brain tissues. Although this damage may not be sufficient to interfere with the patient's ability to get along in life—should he recover from his psychosis—this damage must still be considered and every effort made not to give more treatment than is absolutely necessary.

Battling Wood Ticks

(Continued from page 609)

species may be identified from pictures and from a written description of their appearance. Of course, it is best to have some one who has studied ticks point them out in real life.

The back of the mature male of the venustus is generally brown in color with white markings quite generally distributed. It is nearly three sixteenths of an inch in length and increases but little in size after feeding on blood.

The mature female venustus is brown in color, except that there is a white shieldlike area just back of the head. The female is about the same size as the male until after feeding, when her body becomes greatly engorged with blood, grayish in color and often more than a half inch in length.

The mature male variabilis has a hard brown covering over the back marked with white lines. It ranges in length from one eighth to three sixteenths of an inch and does not increase much in size after feeding.

The mature female variabilis is brown and bears a hard shield marked with white on the back near the head. They are about the same size as the males, except that they become greatly enlarged after feeding, and their color then becomes a bluish gray.

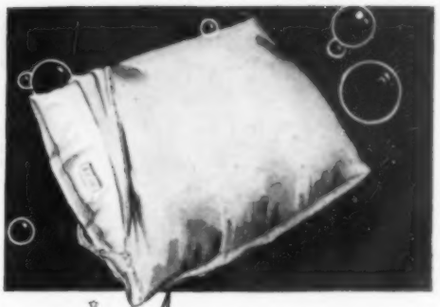
There is still another tick that should not be overlooked in this discussion. The brown dog tick is often confused with the other two species described. For that reason it deserves special mention at this time. It is an important pest of dogs and resembles the wood tick, but it may be distinguished from it by the absence of white markings. This tick is often found around kennels or in houses where dogs are kept, but not out in the woods as in the case of the other two species. It has never been shown actually to carry the germs of Rocky Mountain spotted fever in this country, although it can do so readily under experimental conditions.

E. C. Cushing, an entomologist of the U. S. Department of Agriculture, relates that a woman living not far from Washington, D. C., came to the Bureau of Entomology a short time ago bringing with her a few specimens of the brown dog tick. Being sure that these were wood ticks, the carriers of the dreadful spotted fever, she was almost hysterical as she related that their dog had brought the parasites home from somewhere and that they were now everywhere in the house. In spite of all she could do to be rid of them, it seemed that they were "permanent boarders."

This woman was ready to dispose of the dog, sell the home at any price and move to a section where dog ticks were unknown, if there were such a place. But she was quite relieved when informed that her worries were caused only by the brown dog tick, a species not generally dangerous to man, though annoying and sometimes dangerous to dogs and an annoying household pest.

She was told how to get rid of the ticks on the dog and in the house. The latter, she was informed, might require a long struggle. The dog was to be given the treatment outlined previously for the wood tick. To get rid of the parasites in the house, she was advised to use one of the standard fly sprays, full strength, around the baseboards, window casings and other places where the ticks could hide.

Laymen cannot readily become entomologists, but it may be worth while for all to learn to identify and absorb something of the life history of those three species of ticks: the Rocky Mountain spotted fever tick [D. venustus], the American dog tick [D. variabilis] and the brown dog tick. The brown dog tick is a nuisance when he is once established in the house and is a serious pest to dogs; but the other two are mortal enemies of all mankind.



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HELPING THE EXCEPTIONAL CHILD

(Continued from page 635)

small boys whose social maturity was about the same as his own. The teacher studied the daily record sent by his former tutor. She used the same technic which had already proved to be successful. John did not have to suffer the confusion which comes with changing methods, nor did he have to mark time while his teacher experimented to find out how much he knew. She made one discovery quickly, however. John accomplished more when he worked with the group than with individual attention. For two months he resisted every effort at individual teaching, perhaps because he was so enraptured with his first group experiences in a "real school." During the past month, with his acceptance of individual work, he has made more rapid progress in reading, language and numbers.

He continued his typewriting and has had additional training to improve coordination through the use of scissors, pencil, paste, crayons and hammer. He follows his special corrective routine daily with the muscle retraining teacher. He has learned to climb to the top of the jungle gym, likes to use the seesaws and swings and can use one roller skate. He was bewildered by group games and lost interest in them, beyond the first few instructions. Now, after three months, he has acquired sufficient concentration to play through a whole game with enjoyment. He has even led a group game once or twice.

At first he was a problem at the table, because he was so interested in other persons. He did not attend to his plate and consequently got food in his ears and hair as well as in his mouth. He was slow finishing a meal, not because he was fussy about food but because he talked so much. He has gradually learned to finish his meal promptly, because he does not want to be left at the table alone. Isolation from the group is a satisfactory disciplinary measure for any misbehavior. John craves not only the companionship of the other children but their approval as well.

He has been taught to put on his coat, hat and rubbers without assistance. He hangs up his clothes and puts his toys away. He cannot dress himself without assistance, because he gets his clothing on backward in spite of the fact that he knows that "the name tape is always in the back." He washes his hands in sketchy, little-boy fashion but has to be bathed, because he wastes too much time and is too inefficient at this task.

In three months, John has accomplished a surprising amount, because his needs were so well analyzed and special methods so carefully outlined that the school has been able to carry on intensive training without delay.

EMERGENCY CARE OF BROKEN BONES

(Continued from page 601)

lieves pain and diminishes shock. Board splints do not properly answer the purpose, nor does it suffice to bind one leg to the other. Neither of these methods prevents additional injury, pain and shock. But constant steady pull does do just this. It is possible to obtain this pull by hand, and this is better than any board splint. But it is impossible to maintain steady hand pull for any great distance or for a length of time, and it cannot be properly exerted in most cases unless one has a knowledge of anatomy. Therefore, splints have been devised by means of which a steady pull is maintained. This is known as the fixed traction method of transportation.

A person should be allowed to lie where he is found until constant pull can be exerted on arm or leg before moving commences. This is wholly as important in children as in grown people. Because it is easy to lift a child and put him into an automobile, that is no reason to let the foot below a broken leg dangle or to support the part in such a way that the bones churn around in the soft parts while he is being moved. No board splint definitely prevents this, only manual pull or a fixed traction splint.

It is easy to apply these splints after a short period of training. They are often life saving. They are also a great economy from the point of view of lessening the time before

a person is sufficiently recovered to return to his usual occupation. The greatest opportunity for doing damage and the finest chance to do good in extremity fractures occur in the time elapsing between the moment of accident and the moment of arrival at that place where final treatment will be commenced. The degree of benefit or the damage depends on how the injured person is transported.

Suppose that you should be unfortunate enough to be in an automobile accident on a main highway and break your thigh bone, how would you probably be handled? Other cars would stop and most commonly some one would agree to carry you in his car to the nearest town. Well meaning persons would lift you carefully, trying to support your leg. Without pull being exerted on it, the bones may churn about in the muscles, causing further damage and excruciating pain. You are placed in the back seat of the automobile, often doubling up the thigh like a jack knife in so doing. Sometimes this forces the bone through the skin and even through the clothing. Every bump in the road and every turn may cause more damage and pain.

Assure greater safety for the public traveling through your community and more security for yourself when traveling elsewhere by doing your part in learning and teaching others how to care for accident victims in whom there may be broken bones. The greatest opportunity for better results when bones are broken lies in your attitude toward seeing that these injured persons are transported to the doctor in the most comfort and with the least added injury.

DEATHS FROM DIPHTHERIA

The highest 1939 death rates from diphtheria among ninety-three large cities of the United States were in Reading, Pa., and Chattanooga, Tenn., each of which reported eight deaths in contrast to the thirty-two cities reporting none, *The Journal* of the American Medical Association states in its annual report on the mortality from this disease.

AUTOPSIES (Continued from page 613)

terpretation become that today many Jewish hospitals with predominantly Jewish patients rank among the highest in the country in the number of autopsies performed. Advanced thinkers of all the principal religious groups now believe that by this last service to humanity the dead are, rather, sanctified.

Yet autopsies are far from common in the United States. Only one-sixth as many postmortem examinations are performed in this country as in Europe. Hospitals must do autopsies on at least 15 per cent of their deceased patients in order to be approved by the American Medical Association for the training of interns; they have difficulty attaining that goal. Permission must always be obtained from the family of the deceased, according to law. In most states, even the expressed desire of a dying man for a postmortem examination of his body has no legal weight.

Ignorance of the exact purpose and nature of an autopsy elicits many an instinctive "No" from a family. Sentiment is the most forceful antagonist. Human beings cling to the form of the one they loved in life, and the preacher's words, "Dust to dust . . ." are incomprehensible.

A third objection comes from intelligent persons who approve the act's humanitarian value but who cannot still that insistent fear: "Will the autopsy reveal a disease which I might have inherited?" Medical scientists retort that it is better to face the possibility of a tendency, if it does exist, so one may attempt to prevent it from developing. An autopsy disclosed Jane's mother died of cancer. Jane might have neglected herself but now she is ever watchful of the personal hygiene which will, in a majority of cases, prevent the development of cancer to the point where it is no longer amenable to successful treatment.

Laws requiring autopsies before the death certificate is signed have been proposed. At one time in Germany, autopsies were performed after every death. Some proponents argue that quality, not quantity, is the essential point. But all protagonists agree that a public, increasingly pledged to the prevention of disease, must first of all understand the role that postmortem examinations play toward insuring greater health for our children.

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Medical News

OF THE MONTH

Gallbladder Disease in Children Is Not Rare

Since 450 cases of gallbladder disease in children less than 15 years of age are now on record, disorders of the biliary tract in children can no longer be regarded as rare, and thus many of the vague "stomachaches" of children may really be manifestations of this disease, Victor Seidler and Elizabeth Brakeley, Montclair, N. J., state in *The Journal* of the American Medical Association.

"The diagnosis of biliary tract disease during the early years of life may be reached by the same methods (the x-rays) now employed for adults and is in no way more complicated or difficult than with adults," they say. "Because the symptoms so closely simulate those of appendicitis, differential diagnosis is often misused. Therefore the pediatrician and the surgeon should be on the alert to recognize gallbladder disease unerringly and to operate promptly when surgical treatment is indicated."

Fear Is Greatest Menace of Chemical Warfare Agents

The fear-inducing properties of chemical warfare constitute its greatest menace, Leon Goldman and the late Glenn E. Cullen, Cincinnati, declare in *The Journal* of the American Medical Association.

"There is a vast amount of misinformation on the residual effects of chemical warfare agents," they say. "The blame for practically every complaint, respiratory or otherwise, in veterans has been placed on 'being gassed in the war.' The truth of the matter is that there are relatively few residuals from chemical warfare and certainly not those horrible ones following shrapnel, gunshot wounds and the like. If any kind of warfare could be called 'humane,' chemical warfare warrants such a term.

"There have been too few voices raised to rid the public of propaganda-induced fear of chemical warfare."

In caring for the casualties of civilians, trained personnel, both medical and nonmedical, is absolutely necessary, the authors point out. "This," they say, "is called 'gas discipline.' The number of gas casualties is always inversely proportional to the character of gas discipline. This has been realized in all European countries, and for some years this form of training and preparedness has been going on.

"The question of the future of victims of chemical warfare casualties has been studied thoroughly. In most instances 'gas discipline' was very poor and man casualties were suffered through carelessness. Moreover, with little if any immediate treatment in most cases the relatively low percentage of sequelae is indeed surprising. With an efficient arrangement with trained personnel, this percentage could be reduced even more."

Addiction to Barbiturates Is Fairly Common

Barbiturate addiction is fairly common, making up one-tenth of all drug addiction cases (excluding chronic alcoholism) that were received by hospitals in the larger cities, W. E. Hambourger, Cleveland, states in a report on the promiscuous use of barbiturates in *The Journal* of the American Medical Association.

"During the decade 1928-1937," he reports, "thirteen hospitals with combined admissions of more than 1,250,000 received 643 cases of acute barbiturate poisoning. One out of every 1,900 admissions was due to acute barbiturate intoxication. Barbiturates were responsible for one-seventh of the acute poisonings due to all drugs except alcohol and carbon monoxide. The fatality rate in the cases of acute barbiturate poisoning was 7.3 per cent. As each new barbiturate has been introduced clinically and has become publicized there has been a noticeable trend towards its use in poisoning cases."

Increasing Service of A. M. A.

Evidence of the constantly increasing service of the American Medical Association to the public and to the profession is contained in the annual report of officers of the Association.

A total of seventy-one grants in aid of research were made in 1939 by the Association. Thirty-seven, made by the Committee on Scientific Research, included investigations into the chemical changes in heart muscle, high blood pressure, tuberculosis, brain injuries, food poisoning, gastric and duodenal ulcers, bone marrow, vitamin C requirements of man, sex hormones and studies of the blood.

Twenty-nine grants, made by the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry, involved assistance in research on such problems as whooping cough, local anesthetics, sulfapyridine and malaria. The Committee on Research of the Council on Physical Therapy made five grants, which gave assistance for experimental work in such fields as the effect of heat in bone and joint repair.

Among the important activities of the Association's Council on Pharmacy and Chemistry were investigations in its laboratory on the properties and uses of sulfanilamide and sulfapyridine, standards for the latter being established during the year.

The Council on Foods continued to increase its services to the public and the profession in the field of foods and nutrition. Among its principal activities were investigations and reports on the need for the addition of vitamin B_1 to staple foods, the loss of vitamin C in orange juice on standing, vitamin mixtures, claims for food products rich in certain vitamins, lead in foods, the fluorine content of vitamins and the fortification of foods with vitamins and minerals. Among the activities of the Council on Physical Therapy were investigations into the field of audiometers and hearing aids, inhalators and resuscitators, "fever treatment" apparatuses and radio interference said to be caused by electromedical equipment.

Evidence of the solidarity of the profession is shown in the constant increase in membership; there was a gain of 3,171 during 1939 over the previous year.